

GOVERNMENT OF INDIA
DEPARTMENT OF ARCHAEOLOGY
**CENTRAL ARCHAEOLOGICAL
LIBRARY**

CALL No. 954.55 Bri

D.G.A. 79.

COCHIN SAGA



Kerala Maiden

COCHIN SAGA

A HISTORY OF FOREIGN GOVERNMENT AND
BUSINESS ADVENTURES IN KERALA, SOUTH
INDIA, BY ARABS, ROMANS, VENETIANS,
DUTCH, AND BRITISH, TOGETHER WITH
THE PERSONAL NARRATIVE OF THE LAST
ADVENTURER AND AN EPILOGUE

BY
SIR ROBERT BRISTOW, C.I.E.

*With a preface by
the Right Honourable Sir James Grigg, P.C., K.C.B., K.C.S.I.*



CASSELL · LONDON

CASSELL & COMPANY LTD
35 Red Lion Square
London, W.C.1

and at

210 Queen Street, Melbourne; 26/30 Clarence Street, Sydney; 24 Wyndham Street, Auckland; 1068 Broadview Avenue, Toronto 6; P.O. Box 275, Cape Town; P.O. Box 11190, Johannesburg; Haroon Chambers, South Napier Road, Karachi; 13/14 Ajmeri Gate Extension, New Delhi 1; 15 Graham Road, Ballard Estate, Bombay 1; 17 Chittaranjan Avenue, Calcutta 13; P.O. Box 23, Colombo; Denmark House (3rd Floor), 84 Ampang Road, Kuala Lumpur; Avenida 9 de Julho 1138, São Paulo; Galeria Güemes, Escritorio 454/59 Florida 165, Buenos Aires; Marne 5b, Mexico 5, D.F.; Sanshin Building, 6 Kanda Mitoschiro-cho, Chiyoda-ku, Tokyo; 97 rue Monge, Paris 5e; 25 Ny Strandvej, Espergaerde, Copenhagen; Beulingstraat 2, Amsterdam-C; Bederstrasse 51, Zürich 2

© Sir Robert Bristow, 1959
First published 1959

**CENTRAL ARCHAEOLOGICAL
LIBRARY, NEW DELHI.**

Acc. No. 1116
Date. 27/3/73
Call No. 1116
.....

Printed in Great Britain by Richard Clay and Company Ltd.,
Bungay, Suffolk.
F.159

PREFACE

THIS is the story of the birth and growth to maturity of a project for a major deep-water port on the Malabar coast of Southern India, or rather in the sheltered waters between that Coast and the chain of low islands to its seaward. The scheme had to overcome considerable engineering doubts and difficulties; moreover it could only come to fruition after agreement by four separate authorities—the States of Travancore and Cochin, the Province of Madras, and the Government of India. In the end it did succeed, and success was due in great measure to the skill, persistence, and faith of Sir Robert Bristow, the author of this book. Naturally Sir Robert devotes much space to his conquest of technical scepticism and obstruction and to his persuasion of the four contending parties into a working agreement—with the help, as he says, of some resourceful allies and influential supporters, not the least among these being the late Lord Willingdon.

Like others who went to serve in India in middle life, he was irked, almost beyond endurance, at having drummed into him 'the pace of India is the pace of the bullock cart'. He and they can find consolation for former frustrations in the thought that a space rocket out of control is even less likely to arrive at any pre-determined destination than a bullock cart. And since 1947 India's course seems to be set on modernizing itself at breakneck speed, largely at the expense of simple nations of the West who combine genuine good-will for the people of India with a hope that they will, in gratitude, resist being sucked into the Russian orbit.

Two of the factors which slowed up India's economic development between 1858 and 1947 were the guarantee in Queen Victoria's proclamation not to interfere with social and religious customs, and the assurances of a large degree of independence contained in the series of treaties with individual Princes. Since 1947 the treaties have been swept away and the States have been incorporated into the new India, so that they no longer have any power, obstructive or otherwise. As regards social and religious customs I have no doubt that many of the former leaders of Hindu

PREFACE

thought, including Mr. Gandhi, would regard with misgiving and even distaste Mr. Nehru's policy of going all out to make India into a secular industrial nation. And I suspect that there is, beneath the surface, a good deal of disquiet about it to-day, particularly as the growth of food production is doing no more than keep pace with the increase in population. However, Mr. Nehru is supreme and unshakeable as long as he lives. It is well known that he has on occasion expressed admiration for the material achievements of Soviet Russia. I wonder how he enjoys seeing a Communist Government in office in the very part of India which Sir Robert Bristow's port of Cochin was created to serve.

4th January, 1959

P. J. GRIGG

CONTENTS

	<i>Page</i>
PREFACE. By the Right Honourable Sir James Grigg, P.C., K.C.B., K.C.S.I.	v
INTRODUCTION	xi
ACKNOWLEDGEMENTS	xv
PART ONE—A PORT HISTORY OF 2,500 YEARS	
Chapter	
1 ROMAN AND PRE-ROMAN	3
Ports and Pirates. Commerce and Culture. Rulers and Peoples	
2 ROMAN AND POST-ROMAN	15
How Rome Found Muziris, and what it Found. How Rome Fell, and Why. And what Happened After	
3 THE PORTUGUESE IN INDIA	27
Explorers and Navigators. Kings, Sultans, and Rajas. Portuguese <i>versus</i> Arabians. Violence and Revenge. Influence of Politics	
4 THE DUTCH IN COCHIN	41
Rise and Fall. Lure of Big Profits. Intrigue and Ignominy	
5 THE BRITISH IN INDIA (1600–1920)	49
Creation of the East India Company and the Assumption of Direct Rule by the British Government in 1858	
6 THE COMING OF COCHIN AS A MAJOR PORT	60
The Parts Played by His Excellency Lord Willingdon and a Government Officer	
PART TWO—A PERSONAL NARRATIVE	
7 BRIDGE OF ADMIRALTY	69
8 RIDING THE BAR	77
9 BARS AND ZARIBAS	87
10 CURRENTS—AND UNDERCURRENTS	100

CONTENTS

Chapter		Page
11	UNDER WAY	113
12	THE RAMESWARAM PROBLEM	125
13	TALES BY THE WAY	139
14	THE WAY OF A HARBOUR ENGINEER	151
15	TRAVAIL AND TRIUMPH	160
16	A LONG REST AND A CURE FOR ACUTE NEURASTHENIA	173

**PART THREE—THE FOURTH-STAGE
PRELIMINARIES**

17	THE BEGINNING OF THE BATTLE	179
	Conferences and Rivalries. Schemes and Schemers	
18	CONCEPTIONS AND INFLUENCES	189
	Designs and Estimates. Social Environments and Agreements	
19	THE LAST STRAITS	198
	More Conferences and Questions. Customs Dues and Diagrams. Jurisdiction and Works and 'That Mud-bank'	
20	TEAMWORK AND ITS REWARDS	209
	The End of the Old and the Beginning of the New. Domesticities, War, and Finis.	

PART FOUR—EPILOGUE

	INTRODUCTION TO EPILOGUE	223
21	THE REAL INDIA	225
	Marriage, Education, Work, Religion, Legislation, Industry, and Commerce. Conclusions	
22	RELIGION	240
	Sri Aurobindo and his Exposition of Modern Hinduism	
23	THE STORY OF 1941-58	253
	The Latest Phase of the Cochin Saga	
	INDEX	257

LIST OF ILLUSTRATIONS

	<i>Facing Page</i>
Kerala Maiden	<i>Frontispiece</i>
The dredger <i>Lord Willingdon</i> returning to harbour	80
Close-up view of the discharge end of the dredger's pipe-line	80
The dredger's pipe-line discharging full bore	80
Floating out one of the completed girder spans of the road-rail bridge	81
The test load of the bridge supports	96
The road-bridge, with the lift-span raised and the <i>Lord Willingdon</i> passing through	97
The Administration Block, Cochin Port	128
Willingdon Island and Cochin harbour in 1945, photographed from a model	129
Cochin harbour's memorial plaque	144
Bird's-eye view of Willingdon Island from the top of the signal station, looking south	145
Sir Robert and Lady Bristow	192
Some of the men who built Cochin harbour	193, 208, 209

LIST OF MAPS AND DIAGRAMS

	<i>Page</i>
The inland ports in the middle east	5
The early sea routes to India	8 and 9
South India	127
Cochin and backwaters	140
Diagram of winds and currents	152

INTRODUCTION

IN writing this book the Author seeks to realize and present four main objectives in their proper sequence. Part One deals chiefly with history as such. It describes the function of inland ports (caravanserais) and their gradual replacement by sea-ports and roadsteads. It traces in broad outline the ancient road and sea routes from the Middle to the Far East. Politically it shows how the alternating accessions to supremacy by European nations displaces previous powers in their influence abroad and also affects the fortunes of those countries with whom the previous powers had formerly traded. Incidentally, it reveals in each case how the influence of rival religions can affect political, cultural, and economic developments.

As a typical example of these several aspects the Author has selected the history of the Port of Cochin, where he spent the last twenty-one years of his Government service. Cochin is the chief centre of Malabar and South Indian commerce, but originally, and within the same area of the sheltered lagoons or backwaters which characterize the coastline of what was once, and is now again, Kerala, lay the port of Muziris—the first and chief emporium of India, according to ancient writers. It was situated at the mouth of the Periyar River about eighteen miles north of Cochin, but at a date as yet unknown for certain the impetus of heavy inland floods burst through the low-lying foreshore or shallow bar at Cochin, and so provided a larger and better centre for larger and better ships. This date is traditionally recorded as A.D. 1341, but the Author thinks the slow formation and deepening of the Cochin entrance may have been in progress for centuries before then, and that the culminating 'push' may well have been in 1341.

In order to complete the quasi-historical part of his book the Author has devoted the last chapter of Part One to a brief account of his own development of Cochin, but written in the same objective fashion as the others, that is, as it might have been written by an onlooker with some knowledge of the principal facts. This chapter completes a brief history of the port, as such, between about 500 B.C. and A.D. 1941.

INTRODUCTION

The second main objective is described in the Author's 'Personal Narrative' which forms the substance of Part Two. This objective is concerned first with the solution of four difficult groups of problems comprised equally under the heads of Administration, Finance, Commerce, and Harbour Engineering. Not the least of his difficulties lay in the fact that the principal officers concerned in the administration of Cochin at Government levels were being constantly changed, so that after twenty-one years there had been sixty of them altogether: sixteen Ministers, fourteen Chief Departmental Secretaries, ten District Collectors, ten Political Residents, and ten Diwans, that is Chief Ministers of Indian States. In addition, the Author served during the terms of five Viceroys, five Presidency Governors, five Commanders-in-Chief of the Indian Army, five directors of the Royal Indian Navy, and all the Civil and Military Air Authorities. Finally, there were four successive Maharajahs in Cochin and Travancore States over the same period. The Author's work brought him into some degree of direct responsibility and relationship with nearly all these dignitaries.

The second objective in Part Two is to reveal the vast difference which lies between the purely objective history of these twenty-one years and a detailed account of them by the person most intimately concerned. And this is not merely a personal matter. All historians know that in arriving at the facts of long ago it is of the utmost value if a private letter, or a diary, or even a household account-book can be found which indirectly provides the very clue for which they have been seeking.

Thus the ten chapters of Part Two give the unquestionable details for the earlier part of what is written in Chapter Six of Part One.

The third main objective is contained in Part Three. This objective is again subdivided. First, it describes, in as much detail as may be permitted at this time, the immense difficulties between four Governments and between the Author and commercial representatives, which all had to be surmounted before his proposals and designs for the transformation of the newly formed deep-water harbour into a major port of India could be started and finished. Secondly, there are introduced certain short glimpses of his home life, social duties, diet, and household expenditure, also of his servants and their tendencies in one way or another. These

INTRODUCTION

are not related only as humanly interesting details. The prevailing trend in several countries, including the United States of America, followed even by the 'liberal' press and certain political leaders in Britain, is to spread a misleading if not fantastic picture of the British Government of India: of its servants, the so-called 'tin-gods of the earth', of its principles and habits administratively and privately. Unfortunately these false pictures have a habit of supplanting the truth in later histories, as in the American account of the Boston Tea Party, of the Welsh story of Tonypandy in the Rhondda Valley, or, as a good many believe, in the mystery which provided the theme for the false legend of the Wicked Uncle and the Little Princes in the Tower.

The last object of Part Three is to relate the coming of the War early in September 1939 and to show how the Port had been just ready to meet the long-expected denouement both in equipment and administrative machinery. For many reasons the various discussions and happenings of the period September 1939 to March 1941 have not been included. Many are still secret; of some it is inadvisable to speak, and all are redundant to the first three main objectives of the book, which ends dramatically enough on the coming of the War and the successful completion of all that the Author had conceived in 1920 and his Staff had set themselves to accomplish.

The fourth main objective, however, contained in the Epilogue (Part Four), is not wholly irrelevant; it reveals first the political and economic situation in India as it was soon after the War started, and second, the highest form of Hindu religion as it was then in the mind of one of the greatest Indian writers, Sri Aurobindo, who was living in South India, though the Author was not acquainted with him personally. His outstanding work *The Life Divine* maintains a level of scholarship with a fluency of style and a continuity of logical sequence over 1,627 pages which, in the Author's opinion, is a rare literary achievement. This book, with more daring than discretion, perhaps, the Author has attempted to review in the short compass of five thousand words. Finally, the Epilogue fitly closes with a brief account of what has happened in Cochin since 1941.

The Author would ask his readers to bear in mind that he is not a 'professor' of history. His method has been, first, to read and compare many histories one with another, second, to extract

INTRODUCTION

the gist of them, and third, to reinterpret that gist in the light of his professional insight as an expert in harbour design and port administration. It is this methodical process which has enabled him to begin his book with the assertion that 'The history of civilization is written largely in the history of its ports'. The same principle permits him to 'jump the queue of history', so to speak, and pass on to the next phase of port evolution before reconnecting the ties between them.

•

ACKNOWLEDGEMENTS

Out of many hundreds, high and low, whose names I should remember with grateful thanks, I record but a few, from 1858 onwards. The timely actions of some helped to keep alive the demand for a deep harbour at Cochin, and others, in due time, strove to create it:

Captain Castor, Master Attendant, Cochin, 1860.

Mr. Shaughnessy of the P.W.D. Madras, 1870.

Mr. Aspinwall of the Cochin Chamber of Commerce, 1880.

The Madras Government itself in 1900.

Sir Charles Innes, K.C.S.I., C.I.E., Collector of Malabar 1911-15, and Member of Governor-General's Council 1921-7.

Messrs. Allan Campbell & Sneyd of the P.W.D. Madras.

Captain Leverett, Port Officer, Cochin, for over twenty years.

The members of the *ad hoc* Committee, Cochin, 1920.

The pioneers of the Harbour Staff, 1920-7:

Messrs. F. G. Dickinson, J. H. Duncan, Sambandam Mudaliyar, Abraham the Surveyor, and Natesan, the General Foreman.

The Madras Government, and especially Sir C. P. Ramaswamy Aiyar, K.C.S.I., K.C.I.E. (Law Member), Sir George Boag, K.C.I.E., C.S.I., Sir Hopetown Stokes, K.C.S.I., K.C.I.E., Sir Cyril Jones, K.C.I.E., C.S.I., Sir Donald Field (British Resident), Sir Charles Herbert, K.C.I.E., C.S.I. (Diwan of Cochin State and finally British Resident in Hyderabad State), Sir J. B. Brown, K.C.I.E., and Mr. E. C. Wood, C.I.E.

The later Harbour Staff (1927-35), Messrs. A. G. Milne, C.I.E., M.I.C.E., M.I.M.E. (Acting Harbour Engineer-in-Chief during my absence on leave and sickness), Messrs. Bruce and D. Lamont, M.B.E., J. White, Khan Sahib Biccu Balu, C. W. Knight, P.A.S.I., and Messrs. Venkateswaram, Panniker, Punchipekesan, and Venkataraman.

At the Government of India: Sir Zafrula Khan, K.C.S.I., Sir James Grigg, K.C.B., K.C.S.I., Sir Hugh Dow, G.C.I.E., K.C.S.I., Sir Jeremy Raisman, G.C.I.E., K.C.S.I., Sir T. Vijya Raghava Acharia, K.B.E.

At the Government of Cochin State: H.H. the Maharajah of Cochin, Sir Rama Varma and his Staff, especially Sir Shunmukham Chetty (Diwan following Sir Charles Herbert).

The Port Staff (1935-41), Captain G. F. Fletcher, Port Officer, and Captain A. Sheppard, Chief Harbour Master; the Harbour Staff as before with Messrs. Bappoo Khan, Fernandez, and K. S. Menon; Mr. M. S.

ACKNOWLEDGEMENTS

Menon, Barrister-at-Law (Legal Adviser), and the Rev. G. A. N. Shackle (Defence Assistant).

Mr. A. G. Milne took over from me in 1941 and remained during the War, which in turn brought new and urgent developments of the fourth-stage plans in order to keep pace with the growing requirements.

I deeply regret to record with sorrow the early deaths of four of my most devoted staff, namely:

Mr. John White, Dredging Superintendent and Chief Engineer (pipeline).

Khan Sahib Biccu Baloo, Chief Dredging Officer.

Rao Sahib Sambandam Mudaliyar, Senior Staff Officer and Secretary.

Mr. Panchipekesan, Officer Manager, Engineering Accounts Section.

Never in my experience did men give harder or better service than these, service which, I fear, must be regarded as the main cause of their sudden and unexpected passing. Their names may well be inscribed in the Cochin Roll of Honour.

I must also record with much gratitude the honorary services of my present Secretary, Mrs. Dorothy Burrows, who, over a period of ten years, has gladly typed and retyped these chapters during their several reconstructive phases.

Finally, and with feelings I cannot express, I remember the lady who, in 1923, when Lord Willington was troubled with doubts because so many opponents of Cochin were pressing him to abandon the project in favour of another, was providentially given an unexpected opportunity of supplying private and convincing information which completely reassured him and saved the situation for Cochin. This lady became my wife, and her subsequent part in the affairs of Cochin has been recorded in the Personal Narrative.

R. B.

PART ONE

A PORT HISTORY OF 2,500 YEARS

CHAPTER ONE

ROMAN AND PRE-ROMAN

Ports and Pirates. Commerce and Culture. Rulers and Peoples

THE history of civilization is written largely in the history of its ports. Before men had learned the art and science of ocean navigation or built their ocean-going ships, many historical caravan routes had been provided with 'inland ports' which served not only as resting and reconditioning places for man and beast, but also as junctions with other routes and as exchange marts. These inland ports were the khans and caravanserais of ancient history, those far-off days when travellers and traders journeyed in convoys across deserts and mountainous wastes for thousands of miles east, west, north, and south. In these meeting-places travellers living far apart geographically exchanged ideas and news while the traders sold or exchanged their goods. The elements of a world-wide civilization were thus born in the ancient inland ports. For example, Petra, in the Trans-Jordan valley, has been identified as the ancient capital of the Nabataens, a people of old Arabia who occupied the borderland between Syria and Arabia from the River Euphrates to the Red Sea. Petra, as can be seen from its ruins, was a rock centre of culture and religion as well as a trading terminus or junction. Its origin is unknown, and its tombs reflect both Arabian and Graeco-Roman architecture, as well as Egyptian. Reliable authorities consider that evidences of this constructional evolution clearly indicate that Petra had cultural relations with many different groups of people, as might be expected from its position and function as a great trading centre.

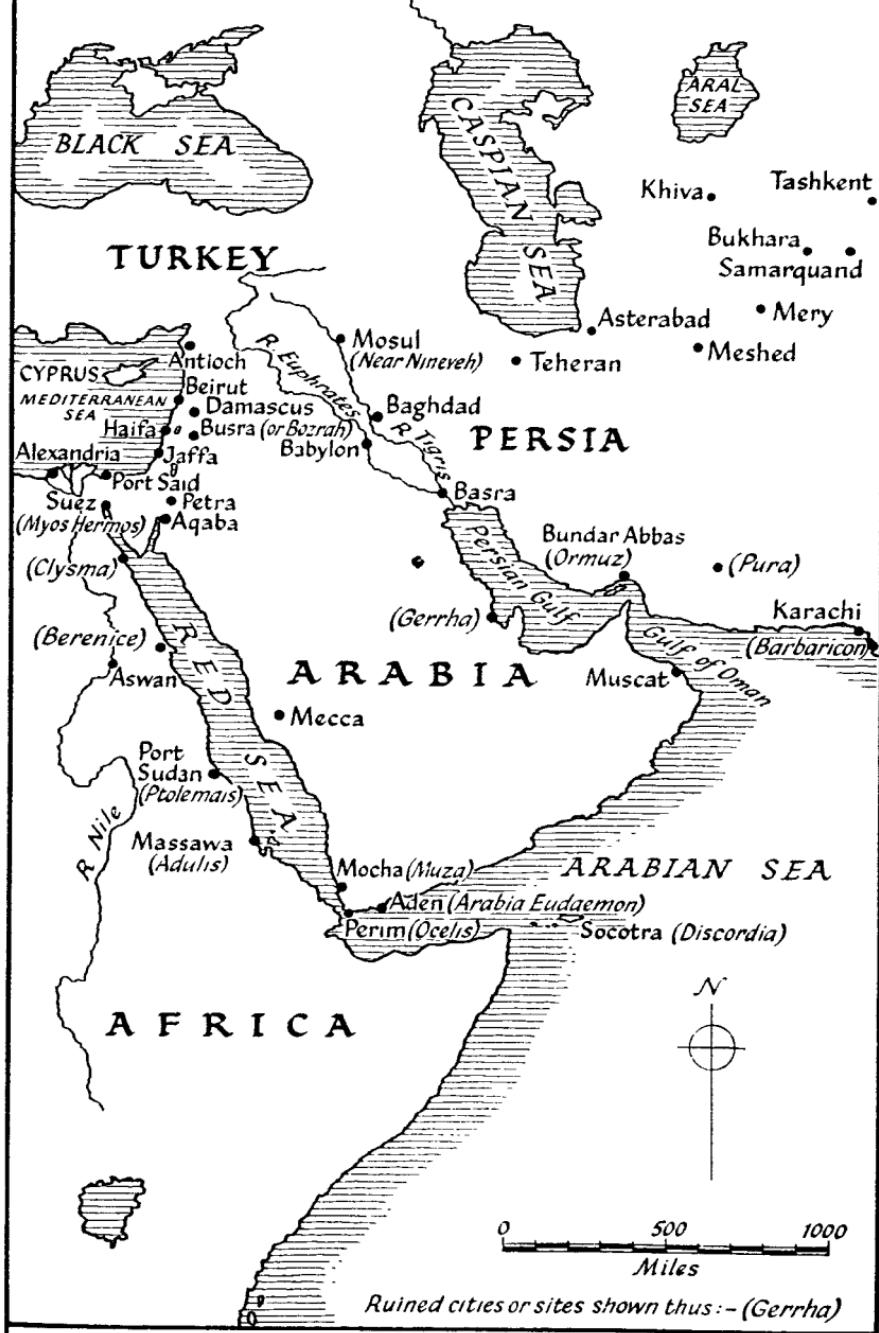
The caravan route from China lay roughly along the zone of the 40° N parallel, with arms penetrating southwards, as well as to northern India, and thence to Baghdad and Antioch. The main east-to-west route bifurcated at Marakanda, the northern turn passing via the Caspian Sea to the Black Sea at its south-eastern extremity. Apart from the above, the most important route east-

ward ran direct from Petra to Basra (Charax) and farther eastward to Barbaricon (near Karachi), which was then a port at the delta of the River Indus. A more northern branch bifurcated at Persepolis, passing through Phra to Kabul, where it joined another easterly route to China. There was a short westerly route from Petra leading to a place known as Rhinocolura, west of Gaza, and a more southerly route to one at Gerrha on the Persian Gulf adjacent to the island of Bahrein. Northwards from Petra yet another route led through Busra to Damascus.

The dangers of ocean travel are familiar to all, even now, and must have been far greater for the pioneers, who, venturing forth from the Nile and the Euphrates, slowly evolved from the old river-craft the sea-going galleys and the trading vessels of the Arabians and Phoenicians. But if the sea could bring danger and disaster, the salt deserts and sandy wastes, the rocky ascents and descents, and the treacherous footholds of mountain passes must have presented far greater toil and risk to life and limb for those early traders. Moreover, the roving bandits who haunted the trading routes were a further menace, and, from an economic standpoint, the essential charges of middlemen and the taxes or dues imposed by the rulers of every large or small State through which a caravan might pass, added enormously to the traders' risks and costs.

Inevitably, therefore, when ocean transport became feasible the development of sea-ports led to the disuse of inland 'ports' and caravan routes. The process was slow, but once experience began to manifest the freedom and general superiority of sea travel by a direct route, international commerce gradually adapted itself to the new conditions. As will be shown in what follows, this process of adaptation was and is still the underlying difficulty of every would-be reformer of world commerce and trade routes.

For example, how far air freighters may replace the mammoth ocean-going freighters of to-morrow, and perhaps demand enormous inland ports as well as sea-ports, remains to be seen; but if this century has taught us anything at all it is that the miracles of to-day are the commonplaces of to-morrow. For example, the growth of world population and the overtaxing of the earth's soil in the production of food will entail the discovery and opening up of new productive areas, and the immense tracts of virgin soil contained within the Amazon Basin and its tribu-



THE INLAND PORTS IN THE MIDDLE EAST

taries seem to be one of the 'musts' of modern life. For this purpose many large 'air-ports' in jungle clearances will have to precede new sea and river routes.

As we have seen, caravan traders were always subject to robbery and violence, and as seaborne traffic gradually supplanted the older system it was inevitable that piratical vessels should infest the coastwise routes. This applied especially to sea routes between Egypt and India, the offenders being largely Arabs, who, in fact, were probably the earliest navigators in these parts.

Piracy at sea has had different objectives and different classes of promoters. Simple theft and robbery with violence are probably as rife to-day as ever before, if not more so. Another form of piracy is that of the privateer at sea, the 'privateer' being a vessel under the ægis, if not the direct orders, of a nation whose objective is to seize and plunder an enemy's merchant ships. A third form was and is that of groups of traders who finance private opposition in order to buy out or destroy legitimate competition.

A study of piracy in all its forms gives a clue to the real purpose and significance of sheltered 'ports' as distinct from coastal 'roadsteads'. Goods from or to ships lying at a roadstead are usually carried either in craft carrying sail or towed by tugs, except when the sea is too rough and the vessels have to lie idle, sometimes for a week or more. This uncertain timing and the double handling of traffic to and from shore add a fifth form of piracy, that of constant pilfering of goods between ship and shore, a common pest at all roadsteads.

From a purely economic aspect, therefore, it is easy to see the further purpose of sea-ports. Caravan routes were very slow, devious, and dangerous in themselves. As knowledge of navigation increased it was clearly advisable to seek the shortest sea routes to the nearest sea-ports assured of safe harbourage and good trade prospects. This search began to develop rapidly when a strong land power gained control of main sea routes, and, aided by greater wealth and influence, began to build larger ships, yet not so big as to prevent them carrying their cargoes into river mouths, for example, or close inshore behind projecting headlands. The next phase began when enterprising shippers or governments discovered that by building moles or breakwaters

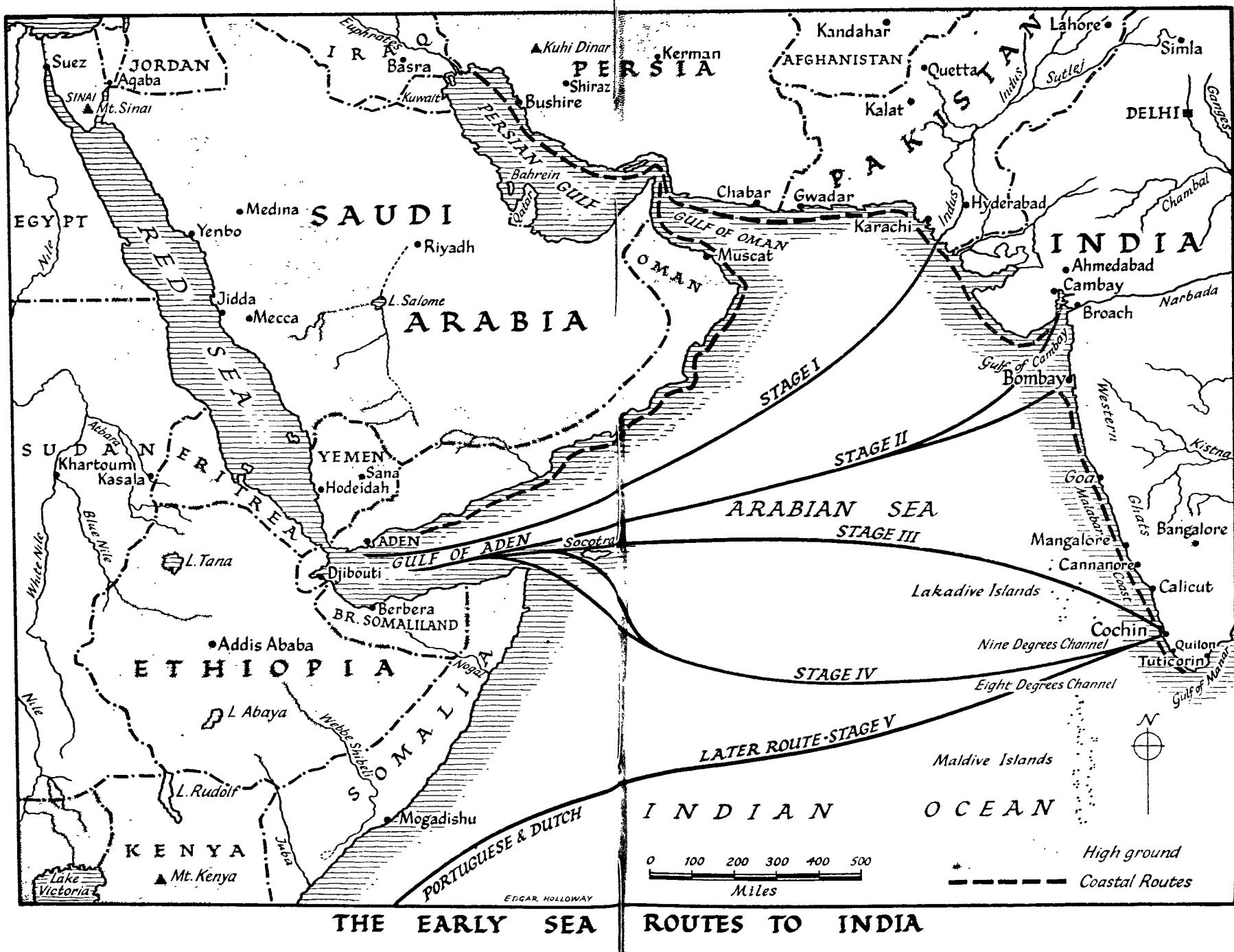
across the foreshores a roadstead could be converted into a harbour where the amount of present and potential traffic justified the adventure financially and the physical features of the coastline were not unsuitable for such an interference with the normal littoral drifts and currents. Another phase began with the coming of steam in place of sail; and especially with the opening of the Suez Canal in 1869, when ocean-going traffic from east and west was vastly increased and major port terminals improved quickly both in size and depth of water, also in wharf space and faster handling appliances on shore and ship, thus avoiding the 'double-handling charges' between ship and shore and securing the quicker 'turn round' of ships in all weathers. Incidentally, the Suez Canal killed the fine old East Indiamen and tea- and wool-clippers.

In addition, however, sea routes had been so protected, from the time of the Roman Empire onwards, by the supremacy of sea-power that, except for outbreaks when sea-power slowly changed from one state to another and buccaneering became a quasi-political occupation, piracy had largely disappeared except in a few and especially well-hidden places where the risk of discovery was least.

This outline of the history and growth of sea-ports indicates the main functions of ocean terminals, which may be summarized thus: the import and export of raw materials and manufacture, as well as grains, pulses, minerals, and fuel; the provision of facilities for the repair of ships and the supply of ships' necessities: water, fuel, fresh food, stores, spare parts; any extra needs for naval, military, or air purposes. The essential facilities and equipment required for the making and daily use of sea-ports will be detailed in Part Two.

Sea-ports have thus become specialized in favour of trade and defence rather than culture. The old caravanserais, or inland ports, as we have seen, provided a meeting-place for travellers who exchanged news and views of the arts and cultures of their respective countries. It is an interesting pursuit to trace the early sources from which nations were thus influenced by others, and at a time when broadcasting and television would have been regarded as supernatural.

Experts classify these influences in four groups, a dominant,



a strong, a slight, and a probable, or trace.¹ Thus, if we begin with China we may have to go back to the later Palæolithic or earlier Neolithic Ages to discover what is called the prelegendary period, and here it is important to notice what is a basic factor of art in all periods of culture. It is this—and here the author speaks his own views—the artist and his subject are largely influenced by the nature of the materials available. In China, for example, the coming of the Bronze Age gave fresh inspiration and impetus to the creative skill of the Stone-Age artist. Likewise the same subject, detailed and clean-cut in a hard and good-wearing stone, would, in a softer or coarser-grained stone, necessitate the omission of the delicate minutiae of the original and stress the broader surfaces of its form and proportion, sometimes with remarkable and proper significance. Indeed, this 'branch' of art has persisted, whatever material is used, and taken many new forms to-day, forms which obviously pervert its original intention.

Following up the original Stone-Age and Shang period of the art of China (6000–2000 B.C.), a 'dominant' strain has persisted from legendary times through the successive periods of the Chou, the Han, the T'ang, the Sung, the Yuan, and the Ming and Ch'ing, but in so doing has influenced or been influenced by other forms of art in every period, thus: the Han period 'slightly' by the Scythian and 'strongly' by the Buddhist Indian; the T'ang period 'dominantly' by the Buddhist Indian, 'strongly' by the Hindu Indian, and 'strongly' by the Moslem Persian. By this time the T'ang period was passing its own dominant 'composite' culture eastward to Taiko and the Nara or Tempyo culture which followed, and indeed persisted through the periods of Yuan, Ming, and Ch'ing. The Ming period received nothing fresh except perhaps a 'slight' strain from Moslem Persia, but it is important to note that the Renaissance in Europe, which contributed largely to the Baroque period, passed on through the Rococo to the Ch'ing in the eighteenth century A.D. In other words, with the growth of economic relations and better communications the 'dominant' strains in art interfused in more or less degree, and, in some cases, very largely according to the 'dominance' of the great religions of the world. For example, Buddhist

¹ In this definition and what follows the Author has been greatly helped by the article 'Periods in Art', *Encyclopædia Britannica*, pp. 522–6. (1929).

India became as it were a meeting and distributing centre both east and west.

Buddhist India gave 'dominantly' to the Hindu India which followed the spread of Buddha's religion into China, especially during the Han and T'ang periods. It likewise passed into Central Asia, but from this point onwards, that is, about the third century B.C., in the early Gupta period, Hindu art as such, although it passed 'strongly' into the Moslem period of the thirteenth century A.D., remained more or less stationary except for various schools or branches, of which the Rajput and the Hoysala were the longest-lived.

It is obvious, therefore, that the 'dominant' stem of original Hindu art passed eastward and contributed 'dominantly' throughout the ages from Buddhist India onwards. Hindu art as such, though contributing something to the Renaissance, has penetrated nowhere else since the Moslem occupation, but China, in turn, passed it on to Korea and Japan where it has remained the 'dominant' strain ever since, though debased perhaps in keeping with the corruption of original Buddhism.

This short outline of the history of the spread of art in India and China makes no pretence of describing the variety, vigour, and imagination manifest in so many forms of Hindu art; and it has to be remembered that India, being Indo-European (Aryan) at first, never became a Hindu nation at one with itself. Rome held the West as a whole, but India was not a whole. Central India, with both coasts, was under the sway of powerful Andhra kings; the north-west was chaotic, for Graeco-Bactrians and pastoral nomads (Sakas) from Central Asia were being driven southwards through Sind regions by the Yue-h-Chi, while Magadha kings ruled the north-east. Three strong Tamil kingdoms occupied the south of the Peninsula. The Indians sent no ships farther westward than the Red Sea mouth, letting the Greeks come to them. The moving force from first to last came from the West; the little-changing peoples of the East allowed the West to find them out. This commercial trend, as we have just seen, was similar to that of art. Not once until Hindu India became Moslem India did any influence from the East penetrate Hindu art proper, which was *sui generis* from its beginning and fortified by its strict Hinduism in religion and 'caste'. The art of aboriginal India, parallel with that of Chaldea, passed little into the pre-Buddhist India, which was

itself a direct debtor to the Hindu parent. The reason is clear, of course, for, being an Indo-European country, it is racially bound up with much of Europe as well as Armenia, Persia, and North Hindustan. Indeed, the oldest civilization in India yet discovered, at Mohenjo Daro on the Indus River, not improbably came from the same source as that of Persia and Chaldea, about the middle of the fourth millennium B.C.

The earliest sea route to India, so far as is known, followed the Red Sea from both arms at its northern extremity, and also from points on the western side connected by road, river, or canal with the delta of the Nile—where Mediterranean traffic from East and West was transhipped. The most important of these points on the Red Sea were: (1) Myos Hormos, near the entrance to the Gulf of Suez; (2) Berenice, just north of the Tropic of Cancer; (3) Adulis, at or near Massawa; (4) Muza, at or near Mocha on the east side; (5) Ocelis, now Perim, or nearby; and (6) Arabia Eudae-mon, now Aden. In addition, the old but smaller port of Ptolemais occupied the site now called Port Sudan.

This very early Red Sea route then passed round the coastline of southern Arabia and entered the Gulf of Oman, where, at the junction with the Persian Gulf in the Strait of Ormuz, the port of Ormuz, Bandar-Abbas, was connected by road to the direct main route to Baghdad to the westward and also to Kabul to the north-east. Vessels then turned east again and hugged the coast as far as the terminal of Barbaricon, near the mouth of the Indus, where, as mentioned earlier, the major port of Karachi now stands or is close by. At a later stage, larger vessels, after leaving Aden, could either pick up traffic *en route*, or sail direct to the same terminal. This probably occurred after the discovery of the characteristics of the monsoon winds, to be discussed later.

At a still later date, vessels from Aden travelled direct to a port in the Gulf of Cambay called Barygaza, between or near either Cambay or Baroda, but a branch of this same route brought the ships to Jaigarh, now Karjar, on the mainland immediately south-east of Bombay proper. It may be safely assumed that the discovery and use of the regular monsoon winds quickened India's trade with Europe, but there seems no doubt whatever that before then small Arabian vessels of one kind or another had crept round the coastline for centuries, and that the navigators of

those early days knew more about the ocean winds and littoral currents than they conveyed to others.

The Roman Empire, as a consolidated whole, politically and economically, may be said to have begun with the election of Caius Augustus as Emperor in the year 27 B.C. He was undoubtedly a very astute administrator as well as an extremely able man in the field, and until he died in A.D. 14 gave new life and inspiration to a republic torn almost to pieces by factional strife.

It was the Emperor Constantine I, of course, who accepted Christianity. He foresaw the great future which lay before that religion and enlisted its binding power in the service of his Empire. To this end he presided at the Ecclesiastical Council of Nicaea in A.D. 325, but nevertheless organized the *agentes in rebus* who, ostensibly as inspectors of the Imperial Posting Service, carried on a wide and deep system of State espionage. He was evidently a man with his feet on the soil of the present and his eyes on the spirit of the future, whence came a religion and state-craft, both temporal and eternal in their composition, which has lasted for over sixteen hundred years in Rome, though suffering periodic breakaways by non-Latin countries. The early (and true) Anglican Church, for example, was founded perhaps two centuries before that of Rome under Constantine, and although merged into the Roman ecclesiastical system introduced by Augustine in A.D. 597, broke away again in the early sixteenth century.

In order to realize the extent of Roman influence east and west during the first three centuries A.D., the following particulars are necessary.

A.D. 14. The Roman Empire included the whole of the countries bordering on the Mediterranean and some others: (modern names) Spain and Portugal, France, Belgium, Holland, Switzerland, Italy, Sicily, Morocco, Algeria, Hungary, Yugoslavia, including Albania, Greece, Crete, Turkey, Egypt, Palestine, and Syria.

Provinces added A.D. 14-89. Great Britain (excluding a part of Scotland and N. Wales), Poland, Bulgaria, and Rumania. Provinces annexed and abandoned by Trajan A.D. 98-116: Armenia, Mesopotamia, Arabia Petræa, and Assyria.

Thus, the whole of the land and sea-ports in the known West

were in the grip or under the influence of Rome, and unquestionably there was a corresponding influence over both Britain and South-west India, for although Rome never 'ruled' India, the rapid growth and value of her trade brought new life and vigour to the industries of the East. Moreover, so far as is known, Rome dealt justly and peacefully in a manner not too common in those days. Unfortunately the lure of Eastern products was to prove one of the chief causes of the decline and fall of her early virtues.

CHAPTER TWO

ROMAN AND POST-ROMAN

How Rome found Muziris, and what it found. How Rome fell and why. And what happened after

BEFORE considering the content and variety of trade which developed between the Roman Empire and India, it may be noted that if India did not seek direct contact with Rome, or rather Puteoli, which was the terminal port for Rome, it is likewise true that Roman ships never passed beyond the transhipment port now called Aden, where the Arabian shippers took over the cargoes, while Arabian vessels on their western journeys had to tranship cargoes chiefly at Berenice, Captos, and Myos Hormos in Egypt. In other words, the big trade links between Rome and Southern India were under the control of Rome, and this control included that of the links by road or canal proceeding southward from Alexandria to ports in the Red Sea or eastward to the Persian Gulf. However, it appears that ships of the Roman Navy guarded the Red Sea and its eastern approaches against pirates, and Roman vessels probably plied between Puteoli and Alexandria.

It may be noted also that the great expansion of Roman trade followed upon the discovery by Hippalus of the secret of the monsoon winds. The date of this discovery has been put at 43 B.C. or A.D. 45, or even later, the historians differing. One certain fact emerges, namely, that Rome without her compact and contiguous Empire, and without the discovery of the invariable habits of the two monsoons, south-west and north-east, and their timings and force, and without the great advances made by the Phœnicians in the science of shipbuilding, could not have used her vast wealth and power to promote and expand commerce between India and Europe or to encourage the exchange of knowledge and culture which slowly evolved.

It is clear also that some individual Romans came by sea to India, and individual Indians to Rome, but not primarily for

trading purposes. The traders belonged to another class. It is also fairly certain that in so doing individual Indians from Muziris made contact with resident Greeks in Rome. After Alexander the Great's arrival in Northern India many Greeks remained and influenced later the 'dominant' type of Hindu art, while other Greeks, returning to the east Mediterranean, brought strains of Buddhic-Hindu religion which may have become incorporated in Mithraism before its transmission to Rome in the first century B.C. by captured Cilician pirates.

There is no record of individual Romans settling in Southern India, nor is there any trace of Roman architecture. It is stated that a small temple was erected at Muziris to the memory of the great first Emperor, Augustus, but there is no sign of it to-day. The first example of town-planning and a massive style of construction is that at Mohenjo Daro in the Indus area, which possibly came from Chaldea. It is remarkable in that its thick walls are double, or hollow, and that a thick damp-course, besides giving the usual horizontal protection at floor level, rises vertically between the two walls as well.

Following upon the successful establishment of regular coastal traffic from Aden, the rapid growth of Roman trade with Muziris in the first, second, and third centuries A.D. led to the introduction of a direct route from Aden to Muziris. Possibly, too, greater skill and experience in the craft of sailing and the construction of larger vessels encouraged shippers to use this more southerly course even in the worst of monsoons, especially as the sighting of the Lakadive Islands (some two hundred miles off the mainland) gave them an excellent guide to their destination. The return journey passed south of the Lakadives, after which some of the vessels called first at what is now Socotra (then *Discordia Island*) and then at other small ports on the Arabian and African coast east of Suez. A further reason for this southern route might be that with the Roman passion for precious ointments and the 'perfumes of Arabia', these last small ports yielded further quantities of this valuable cargo for stowage on the top rather than beneath the coarser materials below.

Muziris, now known as Cranganur, lies at or near the mouth of the Periyar River some eighteen miles north of what is now Cochin. The famous backwaters, at the turn of the pre-Christian

era, were still in process of formation and limitation by the gradual advancement of two strips of land, one from the north and one from the south. These strips were formed out of soil brought down by rivers and canals discharging into the backwaters and coming into contact with material driven on-shore by the ocean ground-swell. This swell usually succeeds the rainy and windy period of the monsoons.

The two natural forces thus slowly built a natural sandy break-water to the lagoon system of backwaters, and at a varying distance west of the mainland—as much as three miles or more in the Cochin area. Not only so, but from time immemorial a particular feature of the littoral had played a great part in the commerce of South-west India with Europe. The effluent from the Periyar River and all other minor streams south of it contains a high suspension of lateritic soil, a brick-like material which yields a semi-liquid mud which is carried out to sea and along the coastline according to the resultant direction of tidal flow, littoral drifts, and wind forces. If and where it meets a force coming from the opposite direction it slowly settles down near that place for the time being. This may be called stage one in the mystery of the Malabar mud-banks.

A greater mystery follows. When the south-west monsoon bursts, the seaward edge or 'toe' of a mud-bank, lying now on the harder sea bottom at a depth of from three to five fathoms, and at a distance of three to five miles, is stirred up to form a 'barrier' and kept in a state of viscous suspension. The unique quality of the mud and its high viscosity in suspension have the effect of *tranquillizing the whole of the water area over the mud-bank*, thereby providing a 'natural' harbour in the sea itself, and cargoes may thus be carried in lighters with perfect safety to or from the beach. Moreover, the rougher the seas are outside the 'barrier', the calmer becomes the water inside it.

These mud-banks do not always remain in the same place. Sometimes they will move along the coastline in one direction or another; sometimes they are driven inshore and block up the landing-jetties. They are generally situated near a river mouth or where it is known that a river had discharged at one time, but they cannot be regarded as stable. Even when driven rapidly inshore they will disappear completely over a night or two and resume their former or an adjacent position.

The unique significance and importance of the mud-banks in relation to the monsoon winds are now apparent. Omitting the traffic from China and the Far East, vessels from Aden could easily choose the best time both for sailing across to Muziris with a good helping wind, from about the end of May, and finding a safe 'harbour' off-shore, even in the roughest weather, where they could lie in peace, get rid of their cargo, and take on new loads, and also obtain fresh vegetables, fruits, and water, besides many other amenities of life. A district with eighty inches of rain falling in the months of June to September inclusive, and with a lateritic soil bordering its rivers, which is capable of storing fresh water in its vesicles (approached by wells) is a real haven, especially as a journey of a few miles up one of the rivers will enable fresh flood-water to be taken from the surface even though the heavier tidal salt water flows up or down with the current underneath.

Further, and this is equally important, there were several of these mud-banks along the Malabar coast and southward towards Quilon, so that even if the inner harbour of the Periyar River were temporarily closed there were roadsteads and mud-banks elsewhere serving the same hinterlands. A mud-bank near the Periyar outlet was probably the most reliable, but there were others: (1) near the Beypore River, south of Calicut, at Tundis (or Tundi, or Tyndis, or Tyrtis); (2) at Becare or Porkad, south of what is now Alleppey in Travancore; (3) at Nelcyndra or Nelkunda, not far from Alleppey; (4) at Kolum, near, but north of, Quilon in Travancore; and others. It is most probable that these banks and roadsteads changed as the southern of the two outer spits of land growing towards Cochin gave new outlets to sea. Even at this date these spits, in time of heavy floods, are liable to be pierced by temporary discharges in two or three places. At Alleppey itself in monsoon times a subterranean mud stratum will often burst through the comparatively thin layer of sand which covers the sea-bed.

In summing up the position as it was when the direct route was opened to Muziris we have therefore to add the supreme importance of three facts: first, the discovery of the law of the monsoons; second, the discovery of the law of the mud-banks (the south-west and north-east winds provided safe passages either way, the mud-banks provided safe and bountiful havens of refuge), and third, the gaining of direct access to the *source* of luxury products

to meet the extravagant desires of a mighty and prosperous Empire.

In those days trade was concentrated chiefly at Muziris and Bebare. According to the historical evidence the exports brought to these ports from various parts of the hinterland were pepper ('in great quantities, the pepper of Kottanara'), pearls ('in great quantities'), ivory, fine silks, spikenards (from the Ganges), betel, diamonds, jacinths; tortoiseshell (from the 'Golden Island',¹ and 'another sort which lie off Limurike'), rice, ghi, oils, honey, cotton, muslins, and sashes. From another source we get the following, and some extras: 'cinnamon leaf, cinnamon-leaf oil (made from imported raw spice), long pepper, white pepper, black pepper, ginger grass, spikenard-spike, spikenard leaf, amomum, costus, bdellium, pure bactrian; indigo, black; and indigo, prepared after importation, blue.'

In addition, however, Rome bought imports from Arabia and Somali as follows: 'Frankincense (by way of the Gebbanite Arabs), myrrh (of four varieties), ladanum'; these were all native products, but acting as intermediaries, Arabia also sent to Rome 'ginger, cardamum, cinnamon flower-juice, Syrian conacum [?], serichatum, ginger grass. And from Somali: myrrh (two varieties), frankincense (three qualities), *Hammoniaca lacrima* [?], and, as intermediaries, ginger, xylocinnamon, casia (three qualities), cinnamon oil.'

Mr. Warmington² gives many other details of the varieties and prices of all these articles as well as of those imports from places within the Empire itself, and adds this comment:

The first thing which strikes us after a comparison of the groups in this list is the much smaller price generally paid for plant-products obtained from plants growing *within* the Empire than the price paid to Oriental races outside the Empire. The 'imperial' products had no frontier dues, no foreign exactions, and no heavy carriage expenses such as contributed to raise the price of external commodities; they had to bear merely the costs of Mediterranean travel and custom dues *within* the Empire.

¹ The Author believes this to be the present golden-sanded Rameswaram Island, now connected by a railway bridge to South-east India.

² Vide *Commerce between the Roman Empire and India*, E. H. Warmington.

Mr. Warmington's information as to goods and prices from India is taken largely from Pliny, and he makes this further, and significant, comment:

One other important thing is revealed by this group of the list gleaned from Pliny, and that is that the discovery of the monsoons undoubtedly did cause a drop in the prices paid for those Indian commodities that came to the West by sea.

Without wishing in the least to undervalue Mr. Warmington's book, it is pertinent perhaps to mention that recorded history often overlooks points clear to experts in other affairs. In this case the presence of the unique 'Malabar mud-banks' and their guarantee of safe harbourage over two hundred miles of coastline were equally if not more important.

Consequent upon these large imports of oriental luxuries Mr. Warmington has this revealing passage:

The discovery of the full use of the monsoons brought an immense increase in Indian commerce generally, and in Roman importation of Indian goods, which stimulated a yet further demand in oriental articles of luxury. Nero's court set an example, especially during the ascendancy of Poppaea Sabina, who, together with Otho, must have taught Nero many secrets in the art of luxury.

Pliny, in referring to the enormous quantity of oriental spices used at her death, takes occasion to complain of the large amount of specie drained annually by the East from the Empire. Nero himself was accustomed to adorn shoes, beds, chambers, and so on with oriental pearls; most of his palace was decked out with gems, mother-of-pearl, and ivory; and he distributed precious stones among the people. The richer classes, in general, showed a similar prodigality; Otho deliberately invited Nero to his house in order to show him that he was not surpassed by the Roman Emperor in the use of fragrant essences which he (Otho) caused to flow like water from gold and silver pipes, a system introduced by Nero into his own palace. . . . But we must look ahead to Elagabalus (A.D. 218) before we can find a man who wore garments wholly made from silk and took baths in Indian spikenard.

A further passage, taken from Seneca, yields this summary:

He complains about the use of most costly tortoiseshell, tables and precious woods bought at huge prices; crystal and agate vessels, pearls of enormous value lavishly displayed, and extremely costly clothes of silk. . . . The whole is, in effect a denunciation, as we shall see, of costly display of Indian and Chinese luxuries, though the wealthy Seneca himself possessed five hundred tables embellished with ivory legs.

Petronius also speaks, but more playfully, of the same faults in women as a whole, who, having been content with ornaments of glass or paste and the like at the beginning of the first century, had in a generation or two discarded their 'imitations' for the real stones of India. In other cases, the fashionable courtesans of Rome came to demand jewels, rare essences, and ointments as the price of their profession—a touching sidelight, perhaps, on the action of the Magdalene in giving up her most costly possession as an act of repentance.

Rome could not repay India in goods alone, and great sums of money had to be given to stem the adverse balance. 'Periplus' mentions the following exports from Rome:

Great quantities of specie; gold stone, chrysolite, small assortment of plain cloth, flowered robes, stibium, pigment for the eyes, coral, white glass [? Mica], copper or brass, tin, lead, wine, but not much; sandarach (sindura), arsenic (orpiment), yellow sulphuret [sic] of arsenic, corn, but only for the ship's company.

We might perhaps deduce from this list that apart from 'great quantities of specie', which in these days would be the trading equivalent of American dollars and British sterling, Rome exported to India materials previously used for clothing before silks became the fashion, and also imports from parts of the Empire for which there was less use than before. Probably they too had the problem of maintaining old industries by exporting larger quantities of what had previously been produced for home consumption only.

A list of the Roman coins found in various parts of India, and their dates, give evidence of the rapid increase in the export of coinage which followed upon the 'discovery of the monsoon' and the profligate waste of money upon luxuries, as such. Pepper, spices, and other condiments were greatly prized, one would

think, as incomparable digestives during the gastronomical performances of Roman stomachs in those days. For many they are so to-day.

It is interesting to note the similarities in weights and measures as used by the Romans compared with those still in force by shippers to-day. The unit of freight was the talent or amphora. An amphora was the Greek name for a two-handled vase or jar used both by Romans and Greeks. The talent was the Greek name for an ancient weight and meant originally a weight to lift or bear. This weight was equal to fifty-seven pounds avoirdupois, or roughly half a hundredweight, and therefore, presumably, indicated an ordinary lift for man-handling. It will be noted too that fifty-seven pounds is about one fortieth of our ton, and even more significantly, it is *exactly the average weight of one cubic foot of olive oil*. True, it is also the weight of a cubic foot of proof alcohol, but the likely commodity, certainly from the Phoenician age onwards, would unquestionably have been that of olive oil.

Except for special cargoes (heavy metals etc.), the unit of space on vessels to-day is one ship's ton equals forty cubic feet of space —representing the average weight of a mixed cargo. This equals fifty-six lbs per cubic foot and we may therefore assume that one old-style 'lift' equals, say, fifty-seven pounds; forty lifts equals 2,280 pounds, and one such *ton* equals approximately one *tun*, an old name for a large cask holding anything from about 216 to 252 gallons, one ton of fresh water equalling 224 gallons, or 2,240 pounds.

Finally we arrive at the root of all, namely, forty 'lifts' will fill one good cask of olive oil, a cask not too large or heavy to be rolled over a firm surface and then lifted by a pair of shear-legs on board a ship, if so desired, after filling. The Greeks were a wonderful people for getting to the root of things and dealing in practical realities.

The larger vessels used by the Romans carried up to ten thousand talents, or nearly enough two hundred and fifty tons. The smaller vessels used for coastal trade would carry less, of course, perhaps from one hundred and fifty to two hundred tons at most, and draw not more than ten feet fully loaded. It is quite possible that these smaller vessels set the pattern for the native craft used for coastal journeys to-day—the mast raking forward,

gunwales almost awash on a fully loaded vessel, and a cut-throat-looking crew inheriting perhaps many of the hardy characteristics of their far-off ancestors.

The history of the ten centuries from about A.D. 500 to 1500 is so crowded with incident, with shifting of power and influence, with innumerable revolutions in both Europe and India, that the history of a single port or group of adjacent roadsteads seems at first to be a matter of minor consequence. In seeking a ray of light, a clue in the long succession of causes and effects, one has to return to the time of Constantine I and his action in founding the city of Constantinople in A.D. 324 as a new 'Empire' port and capital, apart from Rome. The necessity for this move had been foreseen by Diocletian forty years previously, and Constantine, recognizing the great economic value of the old port of Byzantium—founded in about 657 B.C. and partly destroyed in the second century A.D.—resolved to build his new capital on the same site. Byzantium had been the gateway of all sea traffic passing to and from the Black Sea to Greece, the Mediterranean, and to the Red Sea, through Alexandria.

It was Constantine I who added temporal power to that of his Christian authority; and how far that double responsibility could be upheld in lands as yet unconverted and unwilling to change, and to what extent Rome sought to enforce that authority are, or might be, relevant factors in the slow decline in Roman influence and prestige which followed. For instance, under the heading of 'Syriac Literature', the *Encyclopædia Britannica* records:

The adoption of Christianity by Constantine as the official religion of the Roman Empire had an unfortunate effect on the position of the Christians in Persia. They were naturally suspected of sympathizing with the Roman enemies rather than their own Persian rulers. Accordingly, when Sapor II (310-379) declared war on Rome about 337 there ensued a somewhat violent persecution of the Persian Christians, which continued in varying degrees for about forty years . . . and later persecutions of the same kind.

Nevertheless, it is possible that Constantine deliberately chose to keep Rome as his religious centre while founding Constantinople as (so to speak) his temporal headquarters.

The next epochal change in the balance of power followed

quickly upon the rise of Islamism following the death of Muhammad in the seventh century A.D. The new religion, aggressively held and implemented by its first adherents, spread with rapidity and violence in the Levant, and among the nomadic tribes. The Moors of North Africa were not slow in carrying their campaign into Spain, where they remained until the fall of Granada in the late fifteenth century. The religious wars between Christians and Saracens further complicated the whole pattern of the Near East, politically and economically. Meanwhile Genoa and Venice were fast becoming, after the eighth century, strong rivals of Constantinople's influence, and could they have been united between themselves might have either succeeded or reinforced the Roman Empire to such a degree as to further its power for an indefinite period.

Especially was this possible during the reign of Charlemagne, who, in the mind of ordinary men, was regarded as the great champion of Christianity against the creed of Islamism. He was canonized in the year 1164, though much of his history is legendary rather than factual. But whereas Venice was united and strong, Genoa was politically crippled by internal dissensions between nobles and commoners. All five powers, moreover—those of Rome and Constantinople, the Arabs, Venetians, and Genoese—and of course the Greeks, not to mention others, were deeply at cross purposes in seeking help and arms from other states, and the whole picture is one of savage competition, intrigue, and war.

Venice, on the final downfall of the later Roman Empire in the twelfth century, was left as the best-organized and most influential body to take over the commerce of Rome with India, but instead of sending ships of her own to Aden was content to employ all the intermediate shipping and land agents and confine her own direct activities to the Mediterranean area. Most of these other agents were Arabian, who during this period extended their influence by reinforcing in what is now Calicut a certain tribe as local residents, especially occupied in foreign trade. These were called the Mappilahs, or Moplahs, and though many had been in Calicut before the Mohammedan era, all embraced with fanatic zeal the religion of Islam and its Prophet. In fact, much of what Rome had lost passed into the hands of Eastern rulers and traders rather than of Venice.

The history of South India during this same period is likewise one of conflicting states, large and small, many, in fact, being districts rather than states. There is no doubt whatever that so long as Muziris remained a strong national emporium, and Rome united many states if not in friendship at least in a strong common interest, South India was relatively at peace. Muziris, however, partly due to the decline of Roman commerce, but also very probably because the Periyar river port was becoming less reliable owing to the gradual formation of the Cochin outlet by natural means—and the alteration in the balance of tidal forces within the delta—had lost its supreme importance. It is quite possible also that the old merchants at Muziris, especially Jews and Christians, read the signs of the times and shifted to Cochin as soon as the new outlet became more or less stable; but to what extent the trade of Muziris fell off then, or was transferred to Calicut or Cochin, we have as yet no certain information.

South India had likewise become a political battlefield during this long period, and although the records are confused, and it becomes difficult to trace a design or pattern in any of the operations, there can be no doubt that the germ of war for the sake of gaining new territory was epidemic and virulent, as it was in Europe. All this has been recorded as fully as is necessary or reasonably possible by Mr. K. M. Pannikar in the opening chapter of his book *Malabar and the Portuguese*, and need not be retold here.

What was happening in Europe and South India was but one example of the convulsions which raged not only in the Mediterranean countries but also in Britain, after the departure of the Romans. This long upheaval in temporal affairs, however, may well have sown the seeds of a great reformation in thought and culture which came to full growth in the fifteenth century—the Renaissance. For Britain this slow growth undoubtedly started in the reign of Alfred the Great (871–901), the finest of all British kings. The pure 'Spirit of England', now deeply under a cloud, was born in the person of Alfred—the spirit of justice and wisdom, freedom and discipline, wide scholarship and culture; of Christian fortitude and gallant knightliness: the herald of a civilization yet to be achieved.

Similar 'choice lights' of their several nations and generations burned during the next five hundred years, too numerous to

mention for the purposes of this book; but the course of religion and commerce pursued their disputive ways notwithstanding. Some authorities put the date of the Renaissance as corresponding with the fall of Constantinople to the Turks in the year 1453, but this is acknowledged to be a coincidence rather than a cause.

The Renaissance was born of the suffering of men in all countries, a people not broken, nor even despairing, when the successive phases of the Black Death in 1348 and after threatened to extinguish the race of man altogether.

Nevertheless, many of the old ports survived, and the old middlemen who served them. The oldest sea adventurers of Arabia had regained their prestige and increased their influence in South India, Egypt, and North Africa. Muziris had shifted itself some eighteen miles south to Cochin and all was as it was before Rome came on the scene, except that Venice had succeeded her, and, farther to the west, a nation which had then a flowering of adventurous spirits and bold navigators conceived a new plan for the capture of East and Far East trade which was to have revolutionary consequences. Incidentally it was during this long interval that the south-west coast of India acquired new status by the adoption of its 'Malayalam Era'. This occurred in A.D. 825, not improbably when the last Hindu monarch to uphold a united Kerala, or his immediate successor, relinquished his overlordship. Thus, when India, apart from Pakistan, became one in A.D. 1947 the Malayalam equivalent was M.E. 1122.

CHAPTER THREE

THE PORTUGUESE IN INDIA

Explorers and Navigators. Kings, Sultans, and Rajas.

Portuguese versus Arabians. Violence and Revenge.

Influence of Politics

PORTUGAL in the fifteenth century, as a State apart from the parent country, Spain, was little more than four centuries old. Spain of course dates from remote antiquity, with caves of the Palæolithic period, caves which also exist in the part now called Portugal; and its history of warring tribes of invaders from the earliest Greek times, of Phœnician traders and their influence from 1600 B.C. onwards, of Moorish invaders and Jewish settlements, of its religion and culture, weaves a many-coloured pattern of time and change.

It is not improbable, and an interesting hypothesis, that the early settlers, in Spain, generally referred to as Iberians, spread from the east coast to the west and mixed with the Phœnicians who traded at all Mediterranean ports, and some beyond. Portugal could have provided either a terminal or the point of departure to Britain for Phœnician trading, and the evidence of Iberian origin still exists in the form of skulls, stature, and other features among the small and dark Welsh, Irish, and Highlanders, and in northern parts of Cornwall and Devon.

The Author believes that an Iberian-Phœnician race gave birth to the more daring seamen of both Portugal and South-west Britain, and accounted for the desire to find new worlds by Spain, Portugal, and Britain in the fifteenth and sixteenth centuries and after. The names of Columbus, Henry the Navigator, and Drake stand out as chief among the sea-faring pioneers, while those of Hakluyt of England and João de Barros of Portugal are equally remembered as historians and geographers. Hakluyt was of Welsh stock. Perhaps the most gifted of the contemporary writers was Damião de Goës (1502-74), scholar, diplomat, musician, and

writer, and with all this, a genial man of wide experience and culture.

Thus, the rise and fall of Portuguese influence in Malabar or Kerala forms an instructive chapter of history. It was made possible because of the remarkable example of Prince Henry the Navigator of Portugal, who lived from 1394 to 1460. He was a younger son of King John (João) I, and his mother was a daughter of John of Gaunt. He was in turn soldier, sailor, explorer, colonizer, trader, hydrographer, politician. He either founded, or was one of the founders of, a chair of theology as well as of medicine and mathematics in Lisbon. He invoked the aid of Arabs and Jews and a Majorcan Master Mariner in the making of sea-charts and instruments, and he was a research worker of acute perception himself. His range of sea and land exploration extended round the western coast of Africa from about 35° N to the Equator, and wherever he went he sought to civilize and improve.

His work in the Azores and Madeira brought the islanders much agricultural help and progress in their ecologic conditions. Moreover he had the personality which inspires others to follow a lead, and gave an example and impetus to Portuguese adventure which was to last for a century after his death, extending perhaps also to England, Spain, and Holland. He had the bold spirit by which great things are wrought, combined with the gifts of constructive foresight and the courage that endures. If Portugal could have produced another such Henry at the right time, the history of the Portuguese in Malabar and the Far East, and the resulting history of the eastern ports, might have been more permanently affected. The impetus and all-round ability of Henry naturally inspired Portugal, but few realized that, with rare exceptions, it is only the exceptional man of many parts who can bring lasting reforms to a country.

There were, however, other factors in the causal background which cannot be overlooked. The spirit of the Portuguese was still inflamed with the military and religious ardour which had inspired the Crusaders and the Knights Templars, the Portuguese branch of which had been reformed in the previous century. Moreover, thirty-five years after the death of Henry the Navigator, Manoel I undoubtedly had some very capable men about him. The names of Bartholomeu Diaz, Albuquerque, Almeida, and Pacheco are well known as worthy followers of Prince Henry.

Diaz rounded the Cape in 1486 and reached a point off what is now Durban in latitude $32\frac{1}{2}^{\circ}$ S. His ships were two, one of only fifty tons and one smaller still. His ship's log, if he kept one, must have provided interesting reading. Incidentally, he named the Cape of Good Hope *Cabo Tormentoso*, no doubt for very good reasons. Fourteen years later he and his ship, and several others, foundered in a violent storm off Brazil—towards which coast equatorial currents and trade winds had driven them.

So it was that, concurrently with the loss of Bartholomeu Diaz, King Manoel chose the adventurous mariner Vasco da Gama to lead the next expedition to India, a man born in the year of Henry the Navigator's death. He was said to be a resolute and resourceful seaman, but it seems that he had little culture and no previous conception of the situation as he was to find it. So far as is known, moreover, he had none of the wise and constructive statesmanship of Henry the Navigator, no knowledge at all of Oriental psychology nor of the power of Islam influence which had developed in India, and especially at Calicut. He was essentially a capable master mariner of single mind and purpose: bold, brave, ruthless, and arbitrary. We may well imagine the consequences of such a man with three tiny vessels, the largest of two hundred tons, and one hundred and seventy men all told, setting out to displace an age-old Arabian monopoly in India, especially if part of his intent or instruction was to impose the rulership of Portugal over Western India, or part of it. Confronting him, on the other hand, was an Indian culture and religion twice as old as that of Portugal, and a particularly violent and inherently bloody-minded sect of Arab traders, the Moplahs. As recently as 1921 this same sect rose over an imagined grievance and committed acts of the most revolting cruelty.

Vasco da Gama bears a bad name in India. He is also charged, and perhaps rightly, with equally revolting cruelty. In his case, certainly, the evil he did has lived after him, and not the good. But in the sober judgement of time there are many other aspects to be considered. First, it was a cruel and bloody age of torture, poison, and murder throughout the world; an eye for an eye was the standard of justice, bloody war the only arbitrator, inconceivable massacre of innocents the outcome. What Vasco is alleged to have done is but a speck on the full page of the history of inhuman cruelty.

Has India forgotten what she suffered under Timur's invasion in 1398, and the Mogul Dynasty of 1525: Babur's massacre of Hindus, and Akbar's first seven years of rule after 1556, years of continuous bloody wars? Has England forgotten her Wars of the Roses, and the judicial murders which followed, the burning of witches and heretics later still? Have Christians forgotten the Inquisition, or Moslems the savage murder of unbelievers? Indeed, it is open to some doubt if Vasco really began the assassination. The crime of Vasco which chiefly condemns him is unique in the West. It, or something equally sickening, is certainly not unique in the East.

Let us now review the position as Vasco found it, but first the conditions of his voyage. Vasco's flagship, and one like it, the *St. Raphael*, were square-rigged and of shallow draft 'because of the reported banks and shallows off the African coast'. They had 'castles' fore and aft, and mounted twenty guns, some of them breachloaders. The sterns were square, the stems carved to represent their respective patron saints. 'The crews wore either full armour or leather jerkins and breastplates, and carried crossbows, axes, and pikes'—it may be hoped only when in battle. But, even so, and in that climate, one can only marvel at their hardihood and endurance. The third ship was the *Berrio*, a small ship, a lateen-rigged caravel, fitted out as a store-ship. Her role was to be that of loading water and stores somewhere off the west coast of Africa in readiness for Vasco's return, but by the time Vasco arrived all but three of the crew were dead, and one of these died in a passion of gladness and excitement on seeing his master and shipmates again.

During that long period of waiting, Vasco had reached Calicut on 20th May 1498, and left about the end of August, that is after the worst of the south-west monsoon was over. The return to Lisbon occupied another year, and the whole expedition lasted a little more than two years. In those days ships from wine-producing areas drank less fresh water; men preferred the wine to which they were accustomed, red or white. The hot and very humid climate of Malabar, and life on board a ship at anchor, with crowded small spaces in which to live, comprise about the worst conditions in which anyone can drink *red* wine, in particular, great quantities of which were stored on board before leaving Lisbon.

Vasco da Gama's character, if strong, was undoubtedly temperamental. He has been variously described as firm and patient, proud and irascible, authoritative and obstinate, brave and violent, and it is easy for Europeans who have lived in Malabar to understand how such a man, under great physical and mental stress, could be all these things in turn, and especially if he wore armour or a leather jerkin, and drank copious draughts of red wine.

Let us now turn to the *casus belli*. The power of Islam was then nearing its dominance in North India and over all the trading routes between Europe and India. In fact the Mogul Dynasty, as such, was founded in North India *only twenty-seven to thirty years later*. Who, then, were these armed interlopers with the hated red Sign of the Cross on their ships' sails? Were they not the same people as those who were turning the Moors out of Spain and elsewhere? And what did they herald now? More propaganda, more violence and robbery?

One can imagine the excited chatter of the bazaars, the midnight talks of the merchants, and the political discussions elsewhere. A direct sailing from Calicut to Lisbon would clearly sidetrack the whole of the ancient trading route; and all the links in the chain of profit, from the owners of the coastwise sailing-craft to the rulers of Persia or Arabia or Egypt (all of whom collected dues on imported or even 'through' traffic), would be broken, those of traders and middlemen as much as any. As it happened, there was no particular bond of union between the Moslem who traded and the Hindu 'Samuri' (or Samorin, or Zamorin) who ruled Calicut, and provided the ruler could have made a good bargain with Vasco he would probably have been glad enough to do so. Arab pressure, however, proved too strong for him, and although Vasco probably took away sufficient evidence of good trading possibilities and a great deal of other information, the voyage had been otherwise indeterminate and unprofitable. There is a legend that before going back Vasco called at Cochin, but it lacks verification.

Portugal also reacted very quickly, but differently, on Vasco's return, and in March of the following year King Manoel sent out a fleet of thirteen vessels under Captain General Cabral. On this occasion the leader sailed with twelve hundred soldiers and sailors and seventeen ecclesiastics, of whom eight were Franciscan monks who were to be left in India, and would appear to have been

ignorant of the fact that Syrian Christianity had been introduced and practised in South India a thousand years before. The fleet ran too far south and afterwards encountered such bad weather as to lose four ships in a great storm and three more at other times. It was in one of these that the gallant Bartholomeu Diaz perished, but Cabral had another navigator with him in Nicolas Coelho, a man who had been with Vasco in his recent journey. Coelho took a course to Mozambique and then to Melinda, where he picked up two Indian pilots who knew the sailing route across the Arabian Sea to Calicut.

At Mozambique, however, Cabral had a forewarning of what might be in front of him, having much trouble with the natives there before getting clean away. Mozambique, of course, is in Portuguese East Africa, and Melinda (Malindi) just north of Mombasa. At that time of the year the ships would have had a strong to gale force of wind from the south-west monsoon, and the route probably lay between the Lakadive and Maldivian Islands. Calicut was reached on the 13th September, and there he found even greater opposition than that opposed to Vasco.

Cabral was aware of his difficulties and tried with patience and tact to set up peaceful trading, in which aim he had the support of the Hindu ruler. But the daily obstruction of the Moslems gave him little hope, for after three months he had filled but two ships out of six, in exchange for other goods brought with him. Tired of this, he decided, on the 16th November 1500, to adopt a different policy. If the Moslems were obstructing his peaceful and verbally authorized trading with Hindus on shore, he would obstruct Moorish ships leaving the port; and so he promptly captured one and all its cargo, a course believed to have been condoned or perhaps even hinted at by the ruler himself. An infuriated crowd of three thousand Moslems, who had probably watched this surprise move from afar, then broke into Cabral's newly acquired depot and killed both storekeeper and about fifty men. Cabral retaliated in kind, seizing ten smaller vessels and all their cargo and killing their crews. As a parting shot he bombarded the Moslem stores on shore and probably part of the town. Undoubtedly, the Moslems had made the clash inevitable, and it has to be noted that they had no legal rights. They did not rule the district.

Cabral having heard, either from local sources or possibly from

Vasco himself, of the existence of Cochin, decided to take his ships there and try again. What delayed him *en route* is not known, but he entered Cochin harbour on Christmas Day 1500. No doubt there was apprehension on the part of Moslem traders there, but if, as is almost certain, they had heard of the proceedings at Calicut they would naturally hesitate before offering resistance. In fact it is not at all unlikely that the affair in Calicut paved the way for peaceful trading in Cochin. Peaceful and successful it certainly proved to be, for Cabral appears to have had little difficulty in coming to terms with the Raja of Cochin as well as with the traders. He got away with all his ships full and a profit on the deal which more than repaid the cost of the fleet and its expeditionary charges. At least, that is what history records.

However, Cabral's exploits at Calicut and Cochin were too drastic and significant to escape reaction, and presently reports were being despatched not only to the rulers of Egypt and Arabia but also to merchants in Venice, and other Mediterranean traders. No doubt, too, the Moslems in Calicut would have made it clear to the Samuri that Calicut might now lose most of its overseas trade to Cochin if the Portuguese were allowed to become established, for it was obvious that the direct sea route would prove the cheaper, both for imports and exports. So it was that when Cabral reached home Venetian agents were already at work in Portugal with a view to preventing further ventures, quite possibly by offering better terms of trading, but the Government lost no time in sending Vasco da Gama back, on this occasion with fifteen ships, probably prepared in part while Cabral was on his way home, for Vasco left in February 1502.

And now the ruthless and violent side of his character showed itself. Why should a few Moslems in Calicut try to monopolize European trade with the East? Let them monopolize the markets of India and Arabia, or even Egypt if they could; these were their province, not Europe. By their courage and enterprise the Portuguese had opened the direct sea route to Lisbon, and clearly the producers of Malabar would not sell to the Portuguese unless it was in their own interest to do so. What must the cost have been by the other route, where so many middlemen made their profits and Governments exacted their dues? He, Vasco, had found the market, Cabral had opened it, and it would now be established and held, by force if necessary, and even by

privateering. At this time Isabella and Ferdinand had just fought and forced the Moors completely out of Spain; and it may be that Vasco's real objective was to force the Moslems out of India.

Thus, on reaching the Arabian Sea, Vasco burnt one of their ships returning from Mecca and everyone on it except some children. He bombarded Calicut again and destroyed a fleet sent against him, after which he gathered full cargoes from Cochin and Cannanore (to the north of Calicut) and returned home 'richly laden', apparently by a more direct south-westerly course to avoid attack from the north or west, and perhaps to test a new route. He arrived safely and found that some of Cabral's cargo had already been sold in Antwerp. After this, both Italian and German firms set up agencies in Lisbon, exchanging copper, which was acceptable in India. In other words, Europe was freed from Moslem control of Indian markets, and that, of course, was inevitable in the circumstances.

We may pass over the next phase in which the Moslems offered violence to Cochin by land and sea, and were beaten off time after time by Duarte Pacheco in 1503 and 1504. He also held the new depots successfully established in Cochin. Both Portugal and South India were quick to realize the significance of these victories. Native princes rallied to Vasco's side, eager to trade with him; the Raja, who had played an honourable and courageous part in the troubles, gave Pacheco a title, while the traders of Calicut decided to petition the Sultan of Egypt for help. And their petition was not unheeded.

The Sultan was in fact receiving delegations from interests more powerful than those of Calicut. Envoys arrived from Venice and stressed the seriousness of the situation. Could the Sultan do nothing? Admittedly the Portuguese were very strong at sea: they fought with guns and protected themselves with armour, but could the Sultan bring pressure to bear in other ways? The solution was equally provocative. The Sultan would inform both Portugal and the Pope that he would destroy the Holy Places in Palestine if the Portuguese carried off any more pepper from India. This was safer than sending a fleet to Gibraltar or India in order to engage the Portuguese at sea. Meanwhile, decided the Sultan, the envoys would call in the aid of the Pope to bring pressure upon Portugal and would also get into touch with Frei

Mauro, prior of the Convent of St. Catherine on Mount Sinai, so that the Pope would be further influenced by 'the man on the spot'.

The envoys returned to Venice, and Frei Mauro proceeded to Rome, where apparently he was not immediately successful, for he continued his journey to Lisbon, where he arrived in June 1505, and tried, with the Pope's support, to persuade King Manoel to change his policy. That monarch, however, had already heard of the mission and its objectives and had resolved upon strong action before the Pope could be expected to make up his mind; so that when Frei Mauro arrived in Lisbon a large expeditionary force was already on its way to Cochin.

King Manoel and his Council, moreover, had correctly foreseen the next move. Neither the merchants of Venice nor the Sultan of Egypt were really enthusiastic about the bombardment of Holy Places, and there remained, as the sole hope of restoring the old routes, the defeat and expulsion of Portugal from Eastern waters. King Manoel saw this clearly enough and sent out a nobleman of high rank (Don Francisco de Almeida) in charge of a squadron of twenty-two vessels with two thousand five hundred men, of whom fifteen hundred were soldiers. The fleet included some trading vessels belonging to foreign merchants, Germans, and others. It reached, and reduced, Mombasa on 13th August 1505, set up strong points in Africa, and left Melinda for India shortly afterwards. Here, in Cochin, Almeida assumed the title of Viceroy, strengthened his fort, bombarded Calicut and Quilon preparatory to establishing direct contact with Ceylon and its overseas trade of cinnamon, which the Portuguese were to keep for one hundred and fifty years.

The arrival of such a force in India and its obvious significance had immediate repercussions in Venice and Egypt. A fleet of vessels was mobilized and manned by Turks and Levantines during 1506 and in the following year reached Indian waters. In March 1508 it met and defeated a squadron commanded by the Viceroy's son off Chaul, and the news of this victory flashed through Moslem India as the herald of final triumph. Over a hundred Indian vessels, it is said, then joined the Egyptian fleet, but meanwhile the Viceroy himself, realizing the gravity of the situation and setting out with the strongest fleet he could muster, came upon the allied forces in February 1509 and incapacitated or

destroyed them off Diu, at the entrance to the Gulf of Cambay. With the exception of many pinpricks and of a minor outbreak by Turkey in 1538, this victory made the Portuguese more or less supreme over the Indian Ocean for a hundred years and, in so doing, broke a chain of vested interests stretching from Malabar through Egypt and Arabia to the Mediterranean and beyond Venice to Antwerp.

Alfonso Albuquerque, who succeeded Almeida as Viceroy and made his seat at Goa instead of Cochin, proved a liberal and capable administrator. His conception of a trading Dominion stretching from South Africa to the Far East, with Goa as its administrative centre, was a very bold one, and, given a larger population at home and a succession of rulers and administrators in the class of King Manoel and himself, might have lasted longer than it did.

Whether his innovation of marrying Portuguese crews to Indian women and depending upon their children for future local service was wise or successful is a matter in which, perhaps, there may be two opinions, but the decay of Portuguese rule was certainly not the result of this practice. It was due largely to internal jealousies, disunity, and degeneration, the reasons for which may be read elsewhere. It is said, for example, that Pacheco was allowed to die at home poor and forgotten, and that Albuquerque himself 'died of a broken heart'. This political degeneration made it possible for the Dutch to oust the Portuguese from Cochin in the year 1662-3, and the following quotations, one from a Portuguese source and one from a British, may fitly conclude this section:

From Cochin in India, the 10th day of January 1580

Honourable, most kindly and dear Signor Adelgais, . . . Also I would tell thee that the five ships from Portugal were sent to our master. Thou shouldst know that from the sale of wine, oil, Dutch cheese, fish, paper, and other things, usually the greatest profit is derived; this time no gain at all remains. All this has brought in no more than 12 to 15 per cent., and on the ready cash brought from Lisbon one makes but a profit of 25 per cent. The country is no longer as it was formerly, our Viceroy imposes so many new taxes that all commerce diminishes. If he remains here, no good will come of it. I am of the belief, however, that the King of Portugal

will send hither another Viceroy when he hears of the doings of this present one. There is no merchandise now that can be sent with profit from here to Portugal.

In precious stones there is nothing this year, in fact this country is not such as is generally imagined. It takes as much trouble to earn money here as in other places. Things are no longer what they were 20 years ago. Buying and selling here is more profitable than sending many wares to Portugal. German merchandise has no market here and is useless for this country. Writing tables split in the great heat; clockwork, or anything else made of iron, deteriorates at sea. This year there is nothing to send to Portugal, for pepper, ginger, maces, cocoanut fat have all been brought for the contractors, also cinnamon for the King. One really does not know this time in what to invest one's money.

The fisher has imported Dutch cheese, but is not going to derive great profit from it, since much of it was stolen aboard ship. This likewise happened to our stores. In addition, our sales have been bad. Five ships can bring much into port, and thus everything becomes cheap. The Portuguese here are even more diligent than the people in Lisbon. The *Pietras de Bezoard* are always very dear and not good. After the ships have departed I will try to obtain privately some of these stones that are good, and to send them to thee next year.

Before my departure from Lisbon I informed you how I with my companions boarded our ships. Upon the 4th day of April, 1579 all five vessels sailed from Lisbon at the same time, but we did not however, keep together for more than six days, but each soon struck out on its own course, since each Captain or pilot believes he knows best how to arrive first at the goal. Although these ships are big and powerful, they strive not to stay together. When we had been on our way for a month and had chanced first on the Coast of Guinea and later upon the Linea Aequinoctialis, we realised that we had left Lisbon far too late. We had to sail back and forth along this Linea until we could pass it, and in this wise lost 47 days. Since at this time the sun shines at its strongest and hottest, we had to suffer great heat and torment on this voyage. From thence as the thirty-fourth degree in the other half of the globe, towards the South Pole or the Pole Antartico, as far as the Cape of Good Hope, we had a favourable wind and fair weather, but severe cold. To tell the truth, I would have preferred then to be elsewhere than on this voyage. God be praised, we came through. But it is an old experience in seafaring that come or go, one has to meet such storms. This danger lasts for one

COCHIN SAGA

hundred and fifty miles, which one covers in 34 days. We then arrived at the twenty-sixth degree off the height of Mozambique. There the King of Portugal keeps a fort and a garrison. But whereas it was late in the year, we were not permitted to land, but stayed out at sea 50 miles therefrom. If we had gone ashore we should not have been able to leave again. We then came upon the Linea Aequinoctialis which we passed in 3 days. Thereupon we passed on again to the other side towards the North Pole. Here in Cochin we are situate on the ninth degree from this line and on the other side of Europe. . . .

From Sir Richard Carnar Temple's Introduction to
Malabar and the Portuguese, K. M. Panikkar, 1929.

' . . . Although the Portuguese invasion of the Indian coastal regions was, in the light of the above observations, only an incident in the general history of the country, it had a profound effect on Malabar. The tendency of the rule of the native princelings was towards a consolidation of power in one of them, the Zamorin of Calicut; and there can be little doubt but that something of the kind would have been the fate of Malabar had it not been for the disruptive effect of the intervention of the Portuguese. Their action prevented any such event taking place, and after the fall of their influence nothing of the kind was possible. In fact, the present condition of Malabar under British rule is largely the result of Portuguese action. Again, as has been remarked above, however badly the Portuguese ruled, the people went their own way in domestic and commercial life, and did an immense amount of good to the country by introducing new products, such as the cashew (kishu) nut and tobacco. They also vastly improved the spices and fruits for which Malabar was already famous. Especially was their work beneficial to the cultivation of the cocoanut; and they may be said to have created the great modern trade in coir. So, although there is much to be said against the Portuguese doings in South India, it cannot be truthfully asserted that they produced no good at all. . . . '

If we would see the rise and fall of Portugal in the light of European history, however, it is necessary to add a brief summary which reveals how the foreign affairs of a country are inseparably connected with those at home. Abroad, Portugal flourished too quickly and tried to accomplish too much in too short a time. At home, political and religious changes during the first half of

the sixteenth century began to undermine the stability of foreign affairs. Politics became more under the control of religion, especially that of the Jesuits, and the reunion of Portugal with Spain in 1580, coupled with the dying out of the brilliant group of adventurers who had helped Manoel I, led to great difficulties.

Moreover, Portugal, following in the wake of Spain, had banished or forcibly 'converted' the Jews who had formed the more intellectual section of the trading middle classes. The 'Sixty Years' Captivity' by Spain of Portuguese affairs (1581-1640) completed Portugal's national disintegration for the time being, but the restoration in 1640 enabled Portugal to throw over the yoke of Spain, and gradually to re-assert herself, though not in time to prevent the Dutch from driving them out of Cochin in 1662. Had the discovery of the gold-fields in Brazil about the year 1693, which brought Portugal an enormous revenue in royalties, come in 1640, this loss of Cochin might have been avoided. Further, in the seventeenth century the class of Portuguese occupiers of Cochin degenerated considerably and, even more so, the women who accompanied them—who, it is said, 'in the garb of nobility exhibited the vulgarity of costerwomen'. That alone would be fatal to any country seeking to rule India, and in any age.

Another historian of Cochin, the late Mr. F. S. Davies, Director of Public Education, Cochin State, adds a note which, in effect, reads as follows: The decline of Portuguese power in Cochin began early, in fact, soon after the death of Albuquerque in 1515. The system of 'Government' was inherently vicious. Officers were ill-paid and so allowed to trade on their own account. The real work was done by 'slaves', while the idle population (Portuguese) spent their time in gaming saloons and other 'haunts of iniquity'. In this tolerance of vice (Fra Bartolomeo says in 1789) can be discovered the real cause of Portugal's downfall in Cochin, as well as in other 'possessions' in India. Politically there were more reasons. The increased power of Moguls on land and of the Dutch and English at sea undoubtedly contributed to the result; in fact, as early as the seventeenth century Portugal had lost the monopoly of all her eastern trade.

Nevertheless, the Portuguese built well in other ways and showed a good example in architecture, while the Franciscans lived a simple life among the Indian population and were largely responsible for keeping them docile and industrious, both as

fishers and agriculturalists in a small way. Their work, in fact, remains to this day *and may yet prove to be a saving factor in the politics and industry of South-west India*, where Communism or something very similar is now in control. Sir Richard Temple, in his remarks just quoted, has mentioned other benefits resulting from the Portuguese occupation, and it would be both un-historical and uncharitable not to record the local efforts which must have been made 'on the spot' by good men while Portugal herself suffered rapid decline at home. As a conspicuous example of this it is a remarkable tribute to the justice and influence of Albuquerque's character that many years after his death at the age of sixty-two both Musulmans and Hindus would visit his tomb in Goa and pray for his help and protection against the mal-administration and incompetence of his successors.

CHAPTER FOUR

THE DUTCH IN COCHIN

Rise and Fall. Lure of big profits.

Intrigue and ignominy

IF we read again the history of Europe, and chiefly that of Spain, Portugal, France, Holland, and England during the three centuries 1450–1750, we are at every turn reminded of the conditions which prevailed in the Mediterranean area for many centuries previously. There are the same lusts for dominant power over rival states, the same quests of foreign markets, the same fighting for supremacy at sea, the same piracies, the same political intrigues and *ad hoc* unions of one state with another, the same religious antipathies and abominable tortures of 'heretics', the same massacre of innocents. On the whole, too, it seems that, so far as India is concerned, and particularly at Cochin, each phase of influence precariously gained by the results of war at home had the same conclusion. As we have seen, the loss of power at home and at sea resulted in a lower class of personnel being sent abroad, and also to their faster decadence under the stress of climatic conditions and loss of self-respect. With the more endurable type there were long struggles against the decisions of less efficient and worried officials at home, constant local friction with one state or another, and increasing competition with trade rivals on the spot.

The Dutch, full of energy and zeal after their freedom from the yoke of Spain in the sixteenth century, made their first voyage to the East Indies in 1595–8. Then came the British East India Company in 1600 under a royal charter granted by Queen Elizabeth I, and in 1602 the Dutch East India Company, of whom more will be mentioned presently. Meanwhile, it seems that what Portugal owed to Henry the Navigator in the fifteenth century the Dutch owed in lesser degree to Jan Huyghen van Linschoten in the sixteenth. Born in 1563, he began his travels in 1579 and spent the years 1579–98 in sea travel. First, he travelled to Spain and then, becoming aware at first hand of the Portuguese sailings to

India, joined a ship bound for Goa and did not return until 1589. A few years later he travelled with Dutch vessels to the Arctic and later wrote an account of his experiences. In his book *Navigatio ac itinerarium* he relates his own story as well as the opinions of other travellers whom he had met; and when the Dutch first decided to compete with Portugal in the Eastern market it was Linschoten who provided their book of sailing instructions. He died about the age of forty-eight at Enkhuizen in February 1611.

If the complicated home affairs of Europe, as they concern the Portuguese, Spanish, Dutch, British, and French in India, are tabulated chronologically in vertical columns, and compared (a) with the contemporary history of the Mogul Empire in India after the expulsion of the Moors from Spain at the turn of the fifteenth century, and (b) with the internecine plotting and warfare of rival Indian states between the periods of occupation or partial occupation by foreigners, a pattern will emerge which betrays the covetousness of the human race as a whole rather than that of one country or one individual. And yet, with it all, it must be added that every phase of invasion brought something useful to the development of India, whether in agriculture, planting, knowledge, art, or culture. Moreover, and conspicuously in the case of the British Services between 1858 and 1947, Government officers introduced a standard of probity and justice never before known in India as a whole.

The Portuguese in Cochin defended the town vigorously against the Dutch, but surrendered after the second or third attack within the two years 1662-3. During this time a treaty was drafted and signed at home under which Portugal would have retained Cochin; but the Dutch, being in possession, claimed the right to remain, and so entered upon a stormy period in Malabar history to which they contributed not a few problems themselves. The first half of the eighteenth century brought kaleidoscopic changes in Malabar policy and the second half similar changes in the growth of English power on land and sea. Both of these interacted on the Dutch occupation and have to be borne in mind when considering the significance of their policy from time to time.

It was the Dutch East India Company who succeeded the Portuguese. In Holland there were six bodies or 'Chambers' in

the pool which formed the Company. Policy was directed by a Council of Seventeen and executive administration by the Chambers themselves. Of the seventeen 'Noble Lords' on the Council, Amsterdam contributed eight. Batavia was the administrative centre of their far-stretching 'empire' in the East. Here there were the Governor-General and a Council of nine 'High Nobilities' representing different interests of the Company, and under these were the 'Commandeurs' and Councils of the several provinces or districts. At this distance of time it all looks rather top-heavy for what was primarily a trading company, but the English East India Company is reported to have admired the system as a whole and adapted parts of it in their own system. Indeed, the links between past and present in these adaptations were still visible in both official and mercantile circles in 1947, although of course no comparison could be drawn with the political conditions of 1663 as a whole. In addition to the civil organization there were likewise the armies of occupation and the fleet.

The senior civil staff received both pay and commissions, but the amount of each was fixed, and all salaries and commissions were paid promptly. The pay in the army was poor and the European mortality high; not many Dutchmen would join, and a good proportion of troops were drawn from Germany and elsewhere. The fleet was based principally at Batavia and Ceylon. At Cochin it was generally a negligible quantity. The Home Council maintained direct touch by sending out their own Commissioners to visit, inspect, and report on specific and general matters, and each out-going 'Gouverneur' had to leave a memoir for the guidance of his successor. It was the honourable practice of successors to observe and, in general, respect the guidance thus given. At Cochin the average term of a Gouverneur was about five years, though many served longer. It seemed a well-knit and efficient organization for carrying out a policy if it were a clearly defined and practicable one. It was certainly highly respected at home, and the Company's credit excellent to the last, and in all the markets; though doubt was often cast by rivals as to the legal accuracy of the balance sheets.

But was the policy both clearly defined and practicable? That is the question which bothered the Dutch and troubled Malabar for a century or more. The original plan was to persuade or coerce

the local rulers into giving the Dutch a monopoly of the pepper output in return for military assistance. That plan would command both buying and selling prices, and the policy and aim of the Dutch were perfectly clear. But, as it proved, the idea was soon found impracticable, as anyone who knows the East will realize.

The English, French, and Danes were already trading there. How were the small rulers outside the range of the new Dutch forts to be coerced into selling all their own or their subjects' pepper to the Dutch if the English were willing to pay more for it? It seems surprising that the shrewd Dutch business men who could conceive and build up such an organization as the Dutch East India Company had not foreseen this, especially after their previous experience in the East. On the political side the Dutch were welcome allies to the Cochin Raja and his State, with whom the tradition of the great Pacheco still survived, and for a long time there was genuine reciprocity of interests, with the Dutch very much in the ascendant politically and administratively. Even at this time, however, it seems doubtful if the Raja could prevent his own subjects from selling their produce 'round the corner' if a good chance offered. Still less could he influence those outside his own boundaries.

It is worth while to look at the financial issue as the Dutch saw it, or appeared to see it, for these suggestions are inferences rather than certainties. The aim was stated to be a clear hundred per cent *profit*, and presumably this meant profit after allowing for freights and commissions, on-cost, and all other proper charges at home and abroad. In other words, with the prices ranging then, these charges must have added about sixty-six per cent to the purchase price, and even if these figures are illustrative rather than actual they bring out the gist of the problem.

Quite obviously the English, content with a less ambitious field of action and organization, and less profit if necessary, could pay more and yet show an excellent balance sheet, although it is true that they, too, sought a profit of a hundred per cent where they could get it. The English had pushed into Calicut, Telli-cherry, and Anjengo, largely owing to the great decrease in Moslem influence under Portuguese domination. North and south of Cochin the markets were invaded. Well might the noble Seventeen write in 1667, 'Every effort must be made to have the

English expelled from the land of the Samorin. . . . It will never do to have that nation settled so near us.' Again the policy was clear and definite—and again, quite impracticable.

Thirty years later the garrisons, having failed to coerce Malabar into selling its pepper entirely to the Dutch, were reduced; an even more questionable policy, because of course, after that, political power went the way of pepper, not entirely, nor all at once, but inevitably; and now appearing on the commercial stage there was the adroit Englishman Robert Adams at Calicut playing his cards cleverly with the Samorin, perplexing and outwitting the slower-moving Dutchman, while the Samorin no doubt was equally willing to play off the English against the Dutch at that time. Thus ensued a long and involved struggle whereby each side sought to beat the other by invoking the war-like aid of opposing merchants and nobles who incidentally were themselves not unwilling to conquer and acquire each other's territory.

For a hundred years, therefore, Malabar became a battleground of strangely contrasted forces, political and commercial, all interacting in more or less degree. Dutch, English, French, and Danes strove to beat each other in trade. The rulers and nobles of Calicut and Malabar were drawn into and fished in the troubled waters. They also fought over the spoils. The Raja of Travancore fought for the prize of Quilon. The Rajas of Cochin and of three other States fought to reinstate the Quilon Raja. The Travancore Raja broke down the historic feudal system of Malabar by hanging forty-two nobles for an act of treachery; and until then the noble was unpunishable, even for treason.

This Raja, Martanda Varma, was the strong man of his time, and in the twenty-nine years of his reign, from 1729 to 1758, brought about an amazing expansion of the Travancore State. In this he had the extremely rare kind of genius which could persuade others to fight his battles when his own fortunes were at their lowest. In August 1741 he attacked the attenuated Dutch forces at Kolachel in South-west India and beat them, a severe blow from which the Dutch never fully recovered, for it broke their prestige in quarters where, for obvious political and business reasons, they could not afford to lose it. And in due course Travancore was able to penetrate farther north and control Quilon, Marta, Kayamkulam, and Purakkad.

Meanwhile the Calicut Samorin, hoping perhaps to reach and take over Cochin first, was attacking from the other side, and in the end the Dutch had to parley with Travancore in terms which grievously affected both their administrative status and personal relations with Cochin. Always, hitherto, the Dutch had *promised* armed support to Cochin and the neighbouring small states in return for trade facilities. Now they agreed *not to assist any 'prince' attacked by Travancore*, and thereby left Cochin and the small rulers of the coast to the belligerent Martanda whose army had been reorganized and trained by two Dutch officers 'captured' at Kolachel. They also had to renounce all claim to political authority. The treaty drafted by Travancore in 1748, though put into force at once, was ratified only in 1753, and this gives an idea of the time required for old reports to filter through the many High Nobilities before steamships and telegraphs shortened the ocean distance.

On the business side the Dutchman had done his shrewd best. He was to receive nearly seven hundred tons of pepper every year at a cost of sixty-five rupees per 'candy' (five hundred Dutch pounds), and the English were to get nothing more than had been agreed by a treaty with Travancore in 1727. But—a most significant clause—other supplies of pepper from conquered countries and 'countries still to be conquered' would be sold *to the Dutch* at a cheaper rate of fifty-five rupees per candy. And—still more significant—the Company undertook to sell war material at 'cost price' to Travancore, a phrase which presumably meant that the Dutch could include at least for transport, establishment, and all on-cost charges.

This clause, read with the preceding ones, and the new Dutch policy of neutrality, had a sinister aspect which seems to have been only too clear to the disillusioned Cochin Raja, who complained bitterly to the High Nobilities at Batavia. The agreement, of course, reflected a complete change of policy. The Dutch were switching over to the stronger party and had probably been in secret negotiation with Travancore a good while before. They feared the English; they feared the new Travancore forces; their own forts had been depleted; Cochin might soon go the way of Quilon. . . . In fact, with the Samorin on the other hand, they had no chance of survival. So, they thought, and undoubtedly from a purely business standpoint, the better plan was to make

friends with and help a strong Travancore rather than a Calicut Samorin or a weak Cochin. Apparently the High Ones at Batavia and Amsterdam thought the same, for in due course their final approval, or at least acquiescence, must have been forthcoming.

To this low ebb had Dutch influence sunk. The tide had flowed steadily against them because their aims and policies had been successively retrograde almost from the start. Neither at sea nor on land had they ever been strong enough to enforce a policy of coercion in Malabar. Their careful but inelastic system was too theoretical to wage a commercial war against adaptable and nimble adversaries. Their static policy of 'at least a hundred per cent profit' was also unbusiness-like in the circumstances, and at Batavia both abominable cruelty and corruption disgraced those in high quarters. At Cochin, on the other hand, some of the Gouverneurs' memoirs reveal a high degree of painstaking thoroughness and honesty of purpose. In the early days Gouverneurs had realized that the hundred per cent policy, and all it involved, was fatal, and had said so. It seems as if, at Batavia or Amsterdam, there was an overruling power whose zeal for making big profits and cutting down essential expenditure clearly turned its back on business realities. Could it be that the treasury or counting-house had too much influence then? Counting-houses are, of course, admirable institutions, but their function is arithmetical rather than imaginative, and once the hand of the accountant is allowed to fetter local initiative and constructive imagination the end is only a matter of time.

So it was with the Dutch, and it must be remembered too that they had no heavy port charges to meet worth mentioning. Their sailing-ships crossed the outer bar at high water and anchored inside the harbour freely and in perfect safety. With a broader and more generous policy their future might have been more promising, and they no doubt hoped much from their new agreement, which, on paper, looked a very good deal. Two of their own officers (the so-called 'deserters') were in charge of the Travancore forces, and the Dutch had a monopoly of the sale of war materials. Even at 'cost price' this was an excellent arrangement. For did it not bring in Travancore to uphold the Dutch influence and thereby justify the depleted garrisons? As for the pepper terms, nothing could be better: they were to buy stipulated quantities at from half to two-thirds the market rates. It is indeed

remarkable how, after half a century's experience, the Dutch still believed that a selling price could be coerced in this way.

The Travancore Raja died in 1758, and, as might have been expected, his successor found himself unable to implement the agreement signed five years previously. Much higher prices were being offered, and the Dutch got neither the quantity of pepper agreed upon nor, in all cases, did they get it at their preferential rates. The agreement was in fact by-passed by the markets of Malabar, which were much too scattered and independent to be brought under its rule. Nevertheless, although they had to buy much in the open market, the Dutch fared quite well, and in 1770 Cochin was still a busy and fairly prosperous port. After this, however, the decline was rapid and the fall precipitous. In 1776 they lost their fort at Chetwai to the notorious Hyder Ali, and in 1778 were defeated at Cranganur (both north of Cochin). In October 1795, it is said, a single shot 'planted with excellent skill in the centre of Government House' fitly opened and terminated the British attack on Cochin fort. In 1814, after long negotiations, the town was finally ceded to the British, whose influence in India had slowly increased in inverse proportion with the falling prestige and power of the Dutch at home and abroad.

Thus ends an objective summary of the Dutch history of Cochin looked at from the business point of view. The Dutch, in their personal dealings, had been useful and friendly. They had encouraged planting, and, following the policy of the Portuguese, had effected a commendable increase in the area of coconut plantations. They had built some spacious warehouses and bungalows, notably the house in Bolghatty (1744), afterwards the British Residency. The warehouses were said to have been destroyed by the British 'for strategic reasons' in 1806, though this action was condemned as pure vandalism by others. The Dutch had also built, or rebuilt, the church of St. Francis within the fort area—not, it is feared, an inspiring composition—and, alas, they too left a crowded cemetery. . . . That of the Portuguese had been undermined by sea changes and had fallen into the harbour, from whence it was partly dredged up again in 1925–6. Several of its gravestones are preserved in the Dutch church and others are in a South Indian Museum.

CHAPTER FIVE

THE BRITISH IN INDIA (1600-1920)

Creation of the East India Company and the assumption of direct rule by the British Government in 1858

A HUNDRED years before the English East India Company had been conceived, English merchants had sought a direct route to the Far East. One year before Columbus sighted the mainland of South America, John Cabot, with eighteen men of Bristol, had sailed in a cockleshell of a boat named the *Mathew* via the north and west, but found his progress blocked by Labrador, Newfoundland, and Nova Scotia. This was in 1497; what Columbus had discovered in 1492 was not a mainland, but an island. Thus it was that both Cabot and Vasco da Gama made their first journeys to the East in the same year, the one north and west, the other south and east. Cabot was a citizen of Venice (Giovanni Caboto) and in one of his travels had found Mecca—the ancient 'inland port' and focus of many caravan routes. It was then, about 1483, that he conceived his plan for a new route to the East which would by-pass older European interests in India.

King Henry VIII had supported Cabot and the Bristol merchants in their new adventures, but owing to constant trouble with Spain and the Pope, the need of political security soon outweighed that of economic expansion, and, like King Alfred before him, the King's attention became directed upon the creation of an English Navy sufficient to ward off Spanish invasion as Alfred's had the Danish. In this task, from the points of view of both tactics and strategy, he and his naval architects showed great skill and foresight. A fighting ship would no longer be a cumbrous 'floating fort' under sail, but would be manned only by sailors who would co-ordinate sailing and fighting as one operation, and fire heavy guns by broadsides at a distance and position chosen by them. (It was the Spanish custom, of course, to carry soldiers for battle: the sailors were the bus-drivers, so to speak.) Trevelyan records this in more detail:

The new type of English warship was three times the length of its beam, or more, while the length of the normal "round" ship was only twice its beam. Hitherto sea battles had consisted of ramming, archery and boarding, very much like the battles of the old Greek and Roman navies. . . . From the portholes of Henry VIII's fleet protruded the iron mouths of great cannon in a row, ready to give the shattering "broadside"—the operation of war to which, more than any other, British maritime and colonial power owe their existence. It was Henry VIII himself who had insisted that his naval architects should mount heavy cannon in the body of the ship, and they devised the expedient of piercing apertures in the very hold itself, through which the great shot could be discharged. . . . The Royal Navy was Henry's creation, and it saved both himself and his daughter after him when they adopted an island policy and defied the Catholic powers.

When one considers these facts as a whole, together with the scattering of the Spanish Armada in 1588 and the extraordinary matrimonial adventures of King Henry in his desire to secure an heir to the throne, it really does seem remarkably significant, and probable, that an undercurrent of fate and destiny manifested itself in two unique personalities such as King Henry VIII and Queen Elizabeth I.

Meanwhile, and before the defeat of the Armada, the quest for new lands proceeded: Frobisher and Davis westward and Chancellor eastward, finding the White Sea; Drake round the world in his ever-memorable *Golden Hind* (1578-80), Raleigh in Virginia (1587). It remained for Ralph Fitch, another English merchant, to bring news of his Eastern travels over a period of eight years. He had gathered particulars of trade possibilities from the Persian Gulf to Malacca, details which largely influenced the creation of the English East India Company under the Charter signed by Queen Elizabeth in December 1600. It was given wide powers whereby the expansion of English trade could be effected and maintained.

This Company, as such, was naturally concerned first with 'East' India, but almost from its start was beset with rivals. The Dutch were to take Cochin in 1663, but six new Companies followed England's example: those of France, Denmark, Scotland, Spain, Sweden, and Austria. Of these, the British soon became the strongest, and their need for a faster and better type of

vessel resulted in the creation of a dockyard at Deptford, from whence came the renowned 'East Indiamen', supreme in efficiency and formidable as fighting ships wherewith to beat off (or attack) French, Dutch, or Portuguese traders. From the early seventeenth century, the Company's influence and authority lasted for two and a half centuries, nearly as long as that of the Portuguese and Dutch put together. In 1858 the British Government displaced the Chartered Company and held office until 1947.

About the middle of the nineteenth century there arrived at Cochin a certain Captain Castor, an officer of the Government of Madras, who carried out the duties of regulating shipping and boats, collecting dues and fees, and acting generally as Port Officer or Master Attendant. He was a strict and efficient man, one who took a keen interest in his work and not only wrote careful reports, but preserved legible copies of them. It so happened that the monsoons of both 1859 and 1860 brought severe storms, and shipping was often in danger. One day a report was brought to him that a certain vessel had anchored in calm water some seven miles north of the Cochin entrance while a furious storm was raging all along the coast. Such a report must obviously be confirmed at once, and with little delay the Captain himself investigated the phenomenon. He found the report completely accurate: there was the ship, riding serenely at anchor in a half circle of calm water, perhaps five miles long measured north and south, and stretching two or three miles out to sea. Beyond those limits the great waves of the storm were clearly visible. Captain Castor had rediscovered the ancient secret of the early navigators.

It appeared that the fishermen called the place the Narakal Mud-bank. Twenty or more years previously it had been situated four or five miles farther north, but had been stationary now for a long time. In ordinary weather its existence was not evident, but directly the monsoon broke the water became calm, and, as in ancient history, 'the stronger the gale outside, the calmer the water within'. From that time the Narakal anchorage at Cochin again became a valuable asset to the port in rough weather.

Of equal importance and significance was the vast backwater system which had slowly evolved from the delta of the Periyar River and the lesser streams which discharged into the sea over a coastline of about a hundred miles, from Quilon in the south to

Cranganur in the north. This wonderful area of navigable waters, with minor streams and canals stretching inland like tentacles from the main body, permitted and promoted the use of every kind of native craft, from the toy-like canoe with its tiny mast and its sail no larger than a teacloth, to the ocean-going 'pattimas' with their masts raking forward, their crafty-looking lines, and picturesque crews in their red turbans. Next in order below the pattimas came the transport lighters, varying in size from about thirty to one hundred tons burden. These were the craft which attended the cargo ships in the roadstead, those whose draught was more than about ten or eleven feet and had to remain outside. The lighters were like a child's first sketch of a boat, with sloping bow and stern and little sheer to the hull. The planked skin was of *maradu* wood, not caulked as in ordinary construction but made watertight by horizontal and vertical pads of coir and with the planks themselves sewn together with the same material.

It was said that these homely craft by reason of this very elastic form of construction withstood the bumping between ship and lighter which often happened at sea. They had a mast and sail, but when the wind failed oars were used, not such oars as are used in Europe, but poles with discs at the end, perhaps a foot in diameter. There was no rudder; the helmsman held an implement like a large cricket bat on one side or the other, and occasionally varied his static pose by a few swift strokes paddle-fashion. It was an interesting feature of the natural characteristics of Cochin that for long periods of the year these craft would have a land breeze to take them out in the morning and a sea breeze to blow them back in the afternoon.

The backwater craft were called wallums (or vellams). There were first-, second-, and third-class wallums, according to size and quality of construction. They had a spirally curved finish to the bow and stern, or some other attempt at a terminal feature. Like the lighters, the bow and stern were the same, and the boats travelled with equal facility in either direction. As protection for cargo they had a scientific contraption of palm-leaf and split bamboo which arched from side to side as the beam width narrowed fore and aft from the centre. In this centre, for the convenience of the crew, there was a movable section overlapping the others. It was a most efficient and adaptable form of construction. Heavy loads of five tons or more could be carried, and the smaller

craft, it seemed, could almost navigate the ditches of the country-side. It was sailed, or poled, or rowed; or in very shallow water, pushed, the crew jumping overboard for the purpose. It provided the cheapest form of transport in the world, or at any rate one of the cheapest, which, during the nineteenth century, was stated to have cost about the equivalent of one farthing per ton per mile. Its use dated back to prehistoric times.

If the Renaissance awakened the soul and quickened the pulse of the transition age in all fields of European activity, something of a more material kind must be attributed to the Industrial Revolution of the eighteenth and nineteenth centuries in Great Britain. The deep borings and tunnellings, the blast furnaces, the blazing convertors, and the hum of the new factories set up forces which sent their vibrations to the ends of the earth. As nation after nation felt the stir of this new impulse, they too caught up its beat and transmitted it.

Thus came the revolution in overseas trade; the race for ocean speed, the accurate measuring of distances, the conception of the load-factor and the ton-knot, the idea of bulk storage in relation to tonnage and distance, the quest of new markets. Presently arrived the wrought-iron ship of greater draught and, with it, yet another revolution in the art of sailing the seas. With the deeper ship came the need for deeper and safer harbours, for stronger moorings, for deeper and still deeper wharves, for quicker and heavier cranes, closer railway connexions, shorter road and rail communications. And all this on the physical side only. Behind it grew the stupendous organism of modern overseas commerce with its vast complications, working arrangements, secret agreements, conferences, rebates, tariffs, compromises; its middlemen, mergers, and super-middlemen. Thus also came the struggle between old ports and new ports, between railway ports and ports not 'tied', between roadsteads and harbours, between all agencies whose purpose was to share in the handling of rich productive traffic, new and old. So, too, came the Suez Canal. Farseeing men became port-minded and began to make and study charts and plans, to compare a possible future with the present, to organize new chambers of shipping and chambers of commerce, and to press for new works and facilities.

Against such a background were produced charts of Cochin

port in 1836, 1854, and 1883, and eager comparisons made of distances to Aden, Bombay, Madras, and Colombo. It appeared that Cochin could be made into the only sheltered port *in India* on the *direct* route to the far east. True, Aden was 1,846 miles away, a route longer by 180 miles than that of Aden to Bombay, but then Bombay was 580 miles north of Cochin, so that on the long journey east four hundred miles would be saved by making Cochin the port of call. Again, north and south of Cochin were the roadsteads of Calicut and Alleppey, of Tellicherry and Quilon, of Mangalore and Trivandrum, most of them on a back-water system facilitating inland navigation. Here were trade possibilities indeed—as the Romans had discovered nearly two thousand years before. Naturally, no port in South India could hope to compete with those in the north, for, other things being equal, the capacity of a port needs to be proportional only to the productive capacity of its proper hinterland, and Cochin was nearly at the *point* of the geographical triangle which is India.

However, here, less than a hundred miles inland, were the gardens of South India, those fertile plains and hills which, from time immemorial, had sent their produce to lands far distant, east and west. Here were the ancient markets for coconut oil and coir, a great centre for imported rice. Here was a rapidly growing population, and a docile one, carefree and industrious. What more was needed? What more indeed, save that it is one thing to conceive of a harbour in being, and another to find a parent to bear its cost as well as the long travail of its creation on so great a scale. Save also for the present existence of Madras, Colombo, and other interested ports and parties, for internecine jealousies and rivalries among vested interests, for the juxtaposition of disunited provinces or States, for the fact also that no machinery had yet been devised whereby the unprecedented problem of dredging an approach channel three miles long in the open sea, and of maintaining it afterwards, could be solved. Not for a hundred years of amateur suggestions and conflicting expert reports could a parent be found to father such an undertaking.

Meanwhile Cochin lived on, like its Malabar neighbours, in its ancient ways, drenched in a hot sun and humid air for eight months in the year and saturated with tropical rains for the remainder; lived cheaply, with its fruits and rice, curry and chickens, with fish straight from its own nets, with carefully boiled water

and milk for the Europeans. The port traded cheaply, too, its harbour dues a mere few annas for each ton of imports and exports, and freight rates not yet enhanced by war; with good markets of long standing in Europe. Planters and merchants, reputable and long-standing, thrived on their exports of coir and coconut oil, of coffee and ginger, of tea, rubber, seeds, and spices.

And while the British threw, their near neighbours, the Indian traders in Muttancherry, handled rice and oil and other backwater traffic, storing it in a quadrangular building with the oil barrels in the quadrangle itself and the rice within the farmland square of buildings. At the entrance was the little office, and over it, in some cases, the living-rooms. Here, no doubt, the Oriental love of bargaining exercised itself night and day in a mosaic of Oriental smells from the narrow bazaar road immediately behind the water-front. In the centre of this road the privileged cow and goat lived in a state of complete relaxation when not seeking garbage from the open drains, while the Oriental rat waxed fat and sleek on the rice and oil so conveniently at hand, and built his home in the crevices of the rubble walls and drains which lined the water-front.

British Cochin and Muttancherry were the crowded fringes of the harbour water-front: a few rows of houses or business premises, and, behind these, leagues of coconut groves sheltering tiny habitations of hard earth or bamboo and leaf, each set in a small compound with an open tank for its brackish surface water, the beach nearby for its sanitary convenience. Children not to be counted, naked and happy, played with each other, or with a dog, or a fowl, staring round-eyed at passing strangers. Child-mothers, baby on hip, carrying water or food, were ubiquitous; wrinkled and grizzled grandmothers sat at the doors of the huts, silent but seeing. Such was Cochin. A hundred or so Europeans in drills and muslins, thousands of Indians in long white cottons and saris, and a countryside with healthy village industries full of people who, if they wore little, worked hard and could afford white robes for church on Sundays.

It would be interesting to discover the precise local reasons for the sustained agitation in favour of a sheltered harbour which followed Captain Castor's rediscovery. There is nearly always, in India no less than elsewhere, a strong business motive behind any

plea for public improvements, and this motive is seldom the one which appears in print. The best business man is he who can put up a sound proposal on grounds of public utility while perfecting his own plans for a move which will give him a lead over his competitors. Competitive trading makes this inevitable, and it is not suggested that anything worse happened at Cochin. Moreover there may have been no concealed motive at all; perhaps the wave of progress which had reached Cochin translated itself quite naturally into the idea of making a great harbour out of a unique system of lagoons and backwaters. Mr. J. H. Aspinwall, the President of the British Cochin Chamber of Commerce in 1870, himself sponsored the proposal, and all his letters are consistent with this idea.

However, there had been a cyclone in 1842 and very severe storms in 1859 and 1860. Work had been delayed and many lighters probably lost on these occasions. Other merchants were already established at the neighbouring ports of Calicut and Alleppey; and it might have been thought that the construction of a good harbour at Cochin would not only retain its existing trade but increase it from other sources. More likely, perhaps, there was an idea that Cochin might be turned into a coaling station for ocean traffic. The Suez Canal was in the making and the change over from sail to steam approaching its climax. What more natural to firms possessing land in a harbour than to think in terms of coal depots?

As long ago as 13th October 1825 the little *Enterprise* had steamed into Table Bay *en route* for Calcutta. She was only about 141 feet long by 27 feet beam and of 464 tons nett. She could carry 380 tons of coal for her own bunkers. There followed a succession of improved vessels, all carrying sails as well as coal, through the years 1830-60, but in the seventies the 'all-coal' ships arrived, and with the opening of the Suez Canal in 1869 the whole shipping position must have been constantly under review by interested parties. It was within these decades that the Cochin Chamber of Commerce became enthusiastic advocates of a harbour project. Both they and Captain Castor had visions of mail steamers coming to Cochin and the conversion of Cochin into the 'Gateway of South India'.

And they had good reasons for thinking on these lines. Unquestionably the opening of the Suez Canal would put Cochin on

the map as a coaling station for the Far East route. It is interesting to remember what might have followed if the science and practice of dredging had been as fully developed then as the art of laying large blocks on the ocean bed to enclose a harbour from the sea. Both Colombo and Madras owe their precedence in time to this fact. Such block-laying presented many new problems at Cochin, and in any case would have been a stupid alternative, with such a splendid harbour already in being. Cochin presented an overwhelming case for a dredged channel leading to an inland harbour, and had such dredging been possible in 1870 there might have been no Colombo as it exists to-day. The Cochin merchants, if they foresaw this, were wise men, and played their cards well.

Mr. Aspinwall put up an excellent case for a harbour, not on this ground, but on others of a more general kind. He referred to the growing trade of the port and the magnificent stretch of natural backwaters lying behind a narrow harbour mouth. He was right in thinking that these waters were unique and in themselves constituted a strong argument for greater utilization in a country which, except for the small and somewhat hazardous experiment at Madras, could boast of no other deep harbour in British India from Bombay on the west side to Calcutta on the east.

The Madras Government could not fail to be impressed by a case which was so well argued and put forward in such terms. However, it availed little because the officers deputed to investigate the matter were faced with a problem in engineering which looked to them very formidable, as indeed it was. They believed, and reported, that a dredged channel (if it could be made at all) would not last unless it were protected by sheltering breakwater arms stretching far out to sea, and that the cost of these arms rendered the scheme financially impracticable, which was perfectly correct. They thought, too, that there would be large quantities of silt discharged into the channels from the enormous area of backwaters.

The members of the Chamber of Commerce were not to be daunted by this report. They replied in effect that the backwaters themselves served as a depositing ground for the river silt and instead of a menace might thus become an advantage. They could not accept the decision as final on the other points. So the fight went on, and it was fortunate for Cochin perhaps that the official advisers to the Government were in fact connected with other

harbours and saw no reason to multiply them. Moreover, the problem of Cochin was admittedly a very difficult one. At best it might be even odds on success or failure. In any case they, the advisers, had to bear the responsibility, and why should they? They had their own harbours and were not convinced that any other was really possible or essential.

Successive advisers from outside also poured cold water on the scheme: Mr. G. Robertson, who had designed the Madras Harbour, Messrs. Coode, Son, and Matthews (the consultants for Colombo), and Mr. Bell of Chittagong. However, the merchants and two Government officers—Mr. G. E. Browning, the Chief Engineer to the Cochin State Government, and Mr. Alan Campbell of the P.W.D. Madras—kept the proposal alive, and Mr. Leverett, the Port Officer at Cochin for over twenty years, was also helpful.

Looking back it seems that both sides were right. The Chamber were right theoretically because, assuming that the outer channel could be dredged at all, it could also be maintained, and without the addition of expensive groynes or breakwaters. Moreover, the backwaters would not contribute an unmanageable quantity of silt. The Government and their advisers were right not to be rushed into the scheme, because—although they may not have known it—dredgers had not then reached the essential degree of efficiency. Far away on the River St. Lawrence in Canada, at Brisbane in Australia, at Bombay, at Portsmouth, Dover, and Rosyth, dredging works had yet to be carried out and major difficulties overcome before a sufficiently powerful and appropriate dredger for Cochin could be designed, and its methods of execution brought to a high degree of perfection. Any attempt to do the work before the year 1920 would have been financially impracticable and disastrous.

It remained for the firm of Consulting Engineers, Messrs. Sir John Wolfe Barry and Partners, to prepare (in 1918) the first comprehensive study of the practical side of the problem. They were fully aware of all the difficulties, and thought that a channel could be dredged which would remain open to shipping all the year round provided that a certain amount of maintenance dredging could be performed during the monsoon. There had been certain improvements in one type of dredger and in dredging methods that gave a hope of success on these lines. But as to

what would happen to the channel during the monsoon without concurrent maintenance this eminent firm were as pessimistic as any others: 'it is our firm belief that it will be obliterated by the end of the monsoon.' This also was to prove wrong. As will appear, there remained one other course, so simple, so certain, and so economical, that it was to solve the long-drawn-out dispute in a dramatic manner.

CHAPTER SIX

THE COMING OF COCHIN AS A MAJOR PORT

The parts played by His Excellency Lord Willingdon and a Government Officer

THE years 1919–20 brought a quick change in the static calm of Cochin. It followed the arrival of a new Governor to the Madras Presidency whose immediate aim was to quicken the life of the Presidency by pressing forward its industrial importance and the improvement of its ports and roadsteads. Early in 1920, therefore, an Admiralty Harbour Engineer, a Mr. Robert Bristow, who was also qualified in architecture and surveying and had had administrative training in the Admiralty Secretariat, was transferred to the Government of India for harbour duties in the Madras Presidency. He was thirty-nine years of age.

He knew nothing of the difficulties which lay before him and so had to face opposition which, if not in the same category as that experienced by Vasco da Gama, was comparable in its intensity. And there was some reason for it. In their report of 1918–19 the consulting engineers¹ had plainly given their views that developments should follow existing foreshore lines, and land speculators had therefore been busy in seeking to acquire likely stretches of water frontage at existing prices. When it became clear, however, that the 'new broom' proposed to make a clean sweep of land acquisition and create an enormous area of hard reclamation in the middle of the harbour his troubles began. And when, not content with this, he insisted that no modern port could exist without 'deep-water' wharves and rail and road connexions brought direct to the wharf side, his troubles increased.

However, by requesting the Madras Government to appoint a fully representative Committee of sixteen persons, he was able in a few months to secure unanimous agreement to a plan for a moderate instalment of his proposals. The Madras Government was astonished at the rapidity of this move but much more wary

¹ Messrs. Sir John Wolfe Barry and Partners, Westminster.

in framing its own views. It also questioned the reliability of the estimates, which it considered much too low, but the 'new broom' bluntly refused to alter them on the ground that he was an expert and others were not. In the end therefore, and largely due to the influence of His Excellency Lord Willingdon, the Governor, a more or less favourable decision was given in 1921.

In 1920, moreover, the Harbour Engineer and his assistant, an energetic young man named F. G. Dickinson, had solved the problem of erosion along the Vaipin foreshore, and, in so doing, had also reclaimed by an entirely new principle of groyning much of the land eroded by the recent monsoon seas. When it came to the first dredging operations in 1922 it was equally clear not only that men trained by the Admiralty in such matters knew what they were about, but quickly made their knowledge felt and respected by the dredging crews, who had previously had an easy life under the supervision of others not similarly qualified. By 1923, therefore, one experimental channel had been dredged across the outer bar and another one inside the harbour by which inland flood-water and strong ebb tides were conveyed more directly to the sea and through the channel across the bar.

Still the Madras Government were not entirely satisfied and decided that the result of the experiment should be referred to an expert Committee in London for advice. After a thorough examination of all the evidence, this Committee approved the proposals without qualification, and so ended what had become known as 'the experimental stage'.

Meanwhile, however, certain problems of administration had been slowly studied in co-operation with the Travancore and Cochin Governments. These concerned questions such as the provision of funds for the new works, the division of customs receipts, the ownership of the land yet to be made in the reclamation, and various side issues arising from them. These discussions dragged on for two years or so, but eventually came to an end with the signing of a four party agreement between the Central and Madras Governments and those of Cochin and Travancore. This agreement cleared the air, and eventually the Madras Government, after consultation with the Cochin Chamber of Commerce, approved what was called the Third Stage programme.

During the whole of the time lost by these delays, necessary, of

course, but trying to the Harbour Engineer and his staff, a 'preliminary works' stage had begun in the construction of the reclamation retaining walls, in the extension of the Vaipin groynes northward, and especially in the observations and experiments which preceded the design of the new dredger. This design was to be a bold departure from the conventional means of dredging in the open sea. It demanded the use of a delivery pipeline over three feet in diameter extending fifteen hundred yards from the dredger's stern in order to convey and discharge dredged material well clear of the dredged channel. A centrifugal pump would dredge up this material and be driven by engines of two thousand five hundred horse-power. The boilers were to be oil fired.

However, between the years 1921 and 1924 the future existence of Cochin as a major port was seriously threatened by two separate interests in Madras. The first arose from an unfortunate difference of opinion between His Excellency the Governor and his Finance Minister, which soon became a topic of conversation in clubs and business circles. Lord Willingdon had from the first desired to concentrate chiefly on Cochin; the Minister would willingly have dropped Cochin in favour of a place called Tuticorin on the south-east coast, a far less spacious area and useless for most naval purposes. An even more difficult situation arose when a retired Admiral R.N. suddenly appeared in Madras as the representative of a well-known dredging firm in London. His main purpose was to extend his firm's legitimate business in India, but when he discovered that a scheme was on foot for dredging a canal through the Island of Rameswaram off the south-east coast (but connected to it by a railway bridge) he and others conceived the notion not only of dredging the canal but establishing a port on it after the manner of Port Said.

For some time it seemed to those who knew what was going on behind the scenes that he would succeed in his business and political endeavours, but a report and estimate from the Harbour Engineer who had made a survey of the area brought to light several practical difficulties involving costs higher than had been anticipated, and this in effect killed the proposal for the time being. The Harbour Engineer was also of the opinion that the goods traffic of much of South India would have been drawn from both Cochin and Tuticorin, and that once the facts were known to these ports, the firms and the Indian states of Cochin and

Travancore, would rise in anger and precipitate a really serious political crisis.

However, after the Harbour Engineer's report and estimate had been printed and circulated among all those concerned, enthusiasm gradually waned, and in the end the Government of India rejected the project. It was commonly believed at the time that the position of the Harbour Engineer had been seriously shaken in 1922 by his apparent opposition to a scheme favourably received by certain officers of Government and even by the Governor himself. For a year or more both he and his future prospects were under a cloud, but he had the support of those who knew all the facts and could take an unbiased view of them.

The new dredger arrived at Cochin in May 1926, and after a brief set-back established a deep-water channel out to sea in March 1928, besides creating a large area of good land inside the harbour and deepening the mooring areas. It was a dramatic success, and the dredging staff, working on a bonus system, broke every known record for dredging output combined with low cost.

This success, however, had the result of reviving business apprehensions in Cochin and elsewhere as to the effect of a completed Cochin on the economic *status quo* of South India, and a determined attack was made, first on the harbour staff after the setback previously mentioned (which entailed nothing more serious than the redesign and renewal of the ball-joints connecting the units of the pipeline), and then on the principle of development outlined in the four-party agreement, to which the merchants' representatives at Cochin had previously subscribed in 1925. Unfortunately the world slump in 1929-32 coincided with the new development and hit some of the firms rather severely, so that as the designs for the conversion of the harbour into a first-class modern port proceeded it was only too evident that nearly all the merchants of the south-west coast were again up in arms.

The main cause of contention, as before, was the deep wharf, the construction of which would cut out lighterage traffic within the harbour in respect of *rail*- and *road-borne* merchandise. To support their case the merchants insisted that Cochin would not create new traffic but would merely divert it from other ports, whereas all the information available from world sources indicated

that a definite and often remarkable impetus was given to a port once new industries were assured of good rail and wharf connexions.

The dispute was further aggravated by the sudden appearance of the South Indian Railway Company as yet another opponent, and one also directed by a home board. What the railway company feared was a short-circuiting of their goods' traffic. In their case the loss was likely to be increased by the fact that, if goods were railed to any wholly British port on their system, the company took the whole of the profits, but if taken to Cochin the trains would have to pass for sixty miles over the Cochin State Railway, and although the same company worked and were paid for working this line, only a portion of the *profit* would then fall to their credit. Similar objections arose in other railway quarters. The Madras Government called yet another large conference of all interested parties to discuss the matter *de novo*. The late Sir Krishnan Nair, the Hon. Law Member of the Madras Government, after much plain speaking on all sides, or so it was said, put certain motions which were carried and secured the principle of extension as proposed, but on a reduced scale.

This, however, was succeeded by more important discussions on various questions concerning port boundaries, civil and criminal jurisdiction, customs administration, and the like, during which the Cochin Chief Minister, a European officer of the British Service seconded to Cochin,¹ was pressed on all sides to agree to a cession of Cochin territory for the purpose of jurisdiction. His reply was that while a single jurisdiction might well be preferable, for political reasons it was not possible; the matter would have to go to the Government of India.

A few months later the designs and estimates for the amended works proposals were submitted in Madras to a third conference. They were approved in principle and referred to the experts who had considered the original scheme more than eight years previously. Once again the committee had no difficulty in confirming the general lay-out with certain technical modifications which could be accepted. Meanwhile the Government of India had been reconsidering the problem from other angles. Its senior officers had grave doubts as to the possibility of working such a harbour smoothly on the basis of divided jurisdiction, but even

¹ Now Sir Charles Herbert, K.C.I.E., C.S.I.

more important to them was the question of its finance and the repayment of loans.

Under the old four-party agreement the Governments of Cochin and Travancore were each to contribute towards the cost of the final works, and for this they would receive a yearly payment of one-third of the nett customs receipts, which in 1922 represented a not immoderate rate of interest. But meanwhile the increased trade of Cochin and the expansions in the scope and scale of all-India tariffs had resulted in a remarkable multiplication of these receipts. Such a radical change had not been foreseen, and resulted in a financial absurdity which was clearly outside the spirit and intention of the original agreement.

However, the Harbour Engineer's plan for a redistribution of the customs receipts by substituting a maximum limit to the third share and a small percentage thereafter, was accepted; and once again the steady persistence of His Excellency Lord Willingdon, now as Viceroy, prevailed in the end; and with the ardent co-operation of a new Cochin Diwan (Chief Minister)¹ a scheme of double jurisdiction with safeguards was finally evolved in 1935.

From 1936 onwards the Harbour Engineer-in-Chief, as he was now designated, was appointed Administrative Officer for the Government of India in addition. In that year the Central Government took all major ports under their direct purview, including Cochin, and set up an Advisory Committee of eleven members to assist in its management. It was most representative; there were two members appointed by each of the three Governments (the control of Madras had passed to the Government of India), two from various municipalities, two from Chambers of Commerce, British and Indian, with the Administrative Officer as Chairman. The Government of India nominated the agent to the South Indian Railway and the Cochin Port Officer as their representatives, and the two Indian States of Cochin and Travancore sent senior officers, who were changed from time to time. Meanwhile, the new works were all proceeding smoothly and rapidly, but in 1937 there came a threat to the port beyond anything previously experienced.

One of the largest 'Malabar mud-banks' suddenly lunged itself southward and invaded the long approach channel. Such a development at Cochin was believed to be unprecedented in

¹ The late Sir Shunmukham Chetty, K.C.I.E.

history, although exhaustive research discovered similar movements, but on a minor scale. Once again the Harbour Department was involved in crucial investigations, and once again an expert Committee (consisting this time of one experienced civil engineer and two well-known geologists) was set up in London to consider the Administrative Officer's reports and documents. After the closest investigation and intensive research carried out in laboratories at Rothamstead, the Committee accepted the Harbour Administrator's conclusions as to the cause and nature of the invasion, besides adding an illuminating commentary on the whole subject. Further experience showed that the danger was neither irremediable nor so serious as had been feared possible. But the year July 1937 to July 1938 was fraught with great anxiety lest, after all, Cochin was doomed to remain a roadstead.

The following year brought the War, and with it the complete military justification of all that had been done, for with the fall of Singapore Cochin became a stronghold of India and the Commonwealth, with consequent naval, military, and air force developments. If it had been created for that and for no other purpose its price was microscopic in the scale of war expenditure. His adventurous work completed, and his age being over sixty, the Administrative Officer and Harbour Engineer-in-Chief retired in 1941, after twenty-one years of service in India.

The long history of Cochin Port thus affords an interesting example of port evolution over two thousand five hundred years, beginning with the early adventures of shippers on a small scale and ending with the conversion of the harbour into a first-rate modern port designed, executed, and administered by a properly qualified Government staff for national and international reasons, and in the interests of producers and consumers as well as intermediary agents. It is also a singular example of hard-won co-operation and compromise between four separate Governments and the whole of a large business community.

PART TWO

A PERSONAL NARRATIVE

CHAPTER SEVEN

BRIDGE OF ADMIRALTY

NEWLY recovered from a fierce attack of influenza, I sat in my office adjoining the Admiralty Archway looking out towards Trafalgar Square. Dockets were piled high in two baskets at my left hand, but I was wholly concerned with my near future: to go or not to go? One's future, I realized, becomes acutely real if, at the age of thirty-nine, one is suddenly faced with a signpost with two arms, each bearing the same warning: 'No return: One way only.' Straight before me lay a main road, well-marked, a thousand years old; on my right appeared a vista of the untried East and a gate opening upon a track which I might have to follow for life, and with unforeseeable consequences.

My doctor had recently warned me that my illness had weakened both lungs and heart; that I must go slow for a while: 'no tennis, never to run for a train, not too much golf or rowing; and no more long hours of overtime'. Was that the right precondition to a life of adventure over unknown ground? And in a tropical climate? Besides, I loved my work in the Admiralty; I felt sure of it in all its branches, and 'how safe and comfortable you are', said prudence: 'the war is over; you have a quiet cottage in the country and delightful walks in all directions; you have a place among the basses in the Royal Choral Society—how good for your lungs, by the way—easy access to theatres and your professional institutions, and a host of congenial colleagues. In a year or two you will get a turn abroad, probably at Bermuda or Singapore, and come back to London, or Plymouth perhaps, where you will be equally at home with your work, never bored, never overstrained. How many millions would like to change places with you? Don't be a fool.'

Thus spoke prudence on that wintry morning after my Chief had given me a message stating that the Government of India wanted an experienced and fully qualified harbour engineer to explore and develop the harbour possibilities of the Madras Presidency, and—would I like to offer myself? The post might

last for twenty years, and this would mean parting from the Admiralty. Parting from the Admiralty? Swapping horses, burning one's boats . . .?

I sat and stared at Nelson's Column, my mind roving for ideas. Presently I thought of Armistice Day and its wild pandemonium; I recalled vividly a retired veteran whom I had seen standing beneath that same Archway lifting his hat to that same Memorial, his face witnessing an emotion not to be told in words. That had touched me deeply—Nelson and his duty, his last letters—destiny. Suddenly, as I stared, a pale sunlight caught the wings of wheeling pigeons and gilded the great omnibuses as they flashed out of the shadows of tall buildings; and at that moment my roving mind lighted upon Lavengro and his 'kindly glow of inspiration' whilst he meditated upon the 'Life and Adventures of Joseph Sell'. For I had had an idea, warm and inspiring. Could even such as I dare to think in terms of destiny and fate? It seemed horribly presumptuous—but suppose—just suppose for a while that this offer came knocking at the door of one especially trained to accept it? And had I not of late secretly cherished, though never admitted, an ambition towards such a position, a place where I, too, could stretch my wings in the sun, make an adventure of faith? I leaned back in my chair and fell into a long retrospection.

Nearly seventeen years had passed since I began my service at Malta Dockyard during its great expansion of 1903-5, when deeper and bigger docks and a breakwater of forty-ton concrete blocks were rising from their deep bases, the whole port alive with naval zest. I lived with four other men, and life was full of activity for us all. There were also cricket matches on Saturdays, swimming nearly every morning before breakfast, house-parties or the Opera after dinner, or riding inland on Saturdays, or a sea-trip to Gozo for the week-end. Sometimes a break would come in my office routine when Their Lordships issued orders entailing survey work inland, and time would pass away happily with chain and ranging rods and theodolite until noon, to be followed after lunch at the plotting board with instruments and a table of natural tangents.

Sometimes we spent whole days in the field subsisting on Gozo cheese, grapes, and bread, and, if we were lucky, green figs straight from the tree. At such times our Maltese chainmen would

A PERSONAL NARRATIVE

gather round and relate with engaging simplicity their own stories and experiences, or enlarge my Maltese vocabulary and be rewarded with a handful of cheap cigars.

However, I soon realized that if I were to rise in the Admiralty I must sit for an examination in London, a fairly stiff one—strictly competitive—and must take it soon. There were to be papers and 'orals' on Engineering and Architectural design and drawing, as well as on Specifications, Quantities, and Estimates: I was quite happy about these; also on Materials of Construction and Surveying, plus orals: here I was quite happy again; on English prose, over which I had few qualms; on Mathematics and Applied Mechanics, calculus and what not: definitely shaky, except that I could calculate almost anything with a pencil and a piece of squared paper; on Hydraulics, Water, and Sanitary Engineering, on the construction of dams and breakwaters; I knew my way well enough in these; on French, or other of four languages; on Geology, Chemistry, Physics: knowledge rather patchy.

So it was that I set to work nightly in my ground-floor bedroom brushing up all I had learned at college and during my training: in a room where in winter, with a smoky paraffin lamp and an oil stove having one ruby eye in its front elevation, I swotted doggedly while huge black beetles crawled about my feet in the warmth of the stove. At last a day came, shortly after my return from this ordeal, which lasted over eight or nine days, when a telegram from Head Office brought the surprising news that I had won first place in the examination. There followed a swift journey to Portsmouth, the boat arriving on Trafalgar Day 1905, the hundredth anniversary of the death of Nelson—strange, that—and a friendly Major R.E. seconded to the Admiralty asking me all about myself and telling me where he proposed to place me.

An hour had passed thus, when a senior contemporary came quietly into my room and said:

'Have you been told about India?'

'Yes, I'm thinking about it. Have you been approached, too?'

'Yes; it's between you and me, and I've decided that I don't wish to be considered.'

'Why?'

'Because my two boys are just going to a prep. school and I

would rather stay here, especially if I could get a transfer to Rosyth or Glasgow, where they will be.' (He was a Scot himself.)

'Then that leaves me in it alone?'

'Yes, because we are "dredging men", I believe, more than the others; it's up to you, now. See you at lunch.'

I followed him to the door and hung up the 'engaged' notice outside, poured myself a glass of water, and sat back in my chair again.

Now; was it by chance or fate that a civil engineer and architect, expert also in harbour design and dredging works, had to be found at once, and that while at Portsmouth I had had eighteen dredging and auxiliary craft to supervise: hopper-loading bucket dredgers, self-loading dredgers, grab dredgers, a new big suction dredger, hopper barges, pile-driving pontoons, block-laying pontoons; that I followed the big suction dredger to Dover and then to Rosyth? And had I not been compelled to study the making of ships, their docking, repairs, and maintenance; to become a practical navigator and a 'dress' diver; to learn the psychology of ships' crews, to study the art of mooring a dredger and holding it exactly up to its work in any sort of weather and against every sort of soil and set of tide? Had I not kept the meteorological records at Rosyth and become weather-wise before the days of weather reports?

Moreover, if I went to India would not my work bring me into direct touch with many other branches of Government there, besides railway authorities and other quasi-governmental activities? Was it only 'chance' that had brought me into direct contact with many Admirals and Captain Superintendents, the Heads of Naval Hospitals and Royal Marine Barracks, of military establishments and other Government departments? And, again, had I not spent my last two and a half years—from July 1917 to January 1920—drafting orders to departmental officers all over the world for my seniors to amend or sign, in preparing submissions and recommendations to the Board of Admiralty, in attending innumerable committees specially convened to deal with staff problems, meeting and working with the Heads of many other civil departments, helping to draft the constitution of the National Whitley Council, besides carrying out much useful work in harbour engineering research?

I sat up with a jerk. Ideas were taking shape; prudence began to look rather mean, destiny a little nearer. But what had this last fifteen months of committee work to do with destiny? Was that, too, a link? I relaxed slowly into a less happy phase of retrospection.

It was that inconsiderate Treasury Order which had started the trouble, or perhaps brought it to a head. It had been issued late in 1918, soon after the war, and its short content was that all Civil Service acting appointments would cease in January 1919 and the holders thereof revert to their substantive ranks. The Order also affected temporary military and civil officers brought in for special war purposes. Up till then the English Civil Service had been sound all through (except perhaps in the Post Office). The entrance examinations, mostly competitive, were sufficiently democratic in scope, close heed had been given to the confidential letters demanded from responsible persons as to the character of each successful candidate, and a good standard of health exacted. In return, a moderate but fair salary had been given, with regular increments up to a graded maximum, a hope of advancement, and a pension to follow; in fact the Civil Service was a fairly good opening for capable and reliable men in those competitive days of 1890–1914, especially if one put security above hazard.

On the other hand, there had been two groups of causes at work undermining the happiness of the staff as a whole, but especially in the junior grades. The first, as I remember it, had started soon after the Boer War, when the cost of living began slowly to advance and the quality of goods slowly to recede. Here, I knew well, were the roots of discontent, but after the Russian rebellion in 1917 the younger and more active-minded of the lower staffs had become inflamed by 'this magnificent experiment' of Communism, and a genuine feeling of injustice had changed into aggressive indignation. The other group of causes had arisen through the temporary introduction of the newly recruited 'military' and other classes, most of them civilians in peace time. These new men had been working side by side with the regular staff, but at higher rates of pay even while they were being taught their jobs. In part mitigation of this injustice many of the senior members of lower grades had been given 'acting' appointments into a higher grade wherever new or widely increased spheres of work justified them.

The Treasury Order had dissolved all these appointments at short notice and with no regard to the fact that the cost of living was increasing. The official 'price-index' system had been derided by married men, and the lower grades of the service had become angry and restive. Indignation meetings had been held and staff associations formed. Affiliations between different associations had followed, and in some cases with outside trade unions.

For many of us, however, the movement had been congenitally distasteful. We had had our own grievances, but had represented them constitutionally in the proper quarter. We had loathed the idea of becoming linked with unions and strikes, but we knew where the shoe pinched and were forced economically to support the movement. However, we successfully held it within constitutional bounds, making this in fact a condition of affiliation with others.

I had served first on the Admiralty Staff Conference and then on the National Whitley Council which followed it, representing at the second of these, with one other, all the Civil Service professions. It had been a remarkable and even unique experience. Never before had anyone dreamed of such a development; in fact there had been many objections to the application of the principle of the Whitley Councils to the Civil Service because 'by no possible stretch of the imagination could the Civil Service be regarded as an industry', an unintended ambiguity which had set us all laughing, juniors and seniors alike.

On this Whitley Council and the Conference which preceded it I had had the privilege of meeting and hearing the views of most Secretarial Heads of Departments, including Sir Malcolm Ramsay and Sir Warren Fisher (Treasury), Sir Oswyn Murray, Sir Vincent Baddeley, Sir Robert Russell Scott (Admiralty), Sir E. Raven (Post Office), the then Sir John Anderson (Home Office), Sir David Shackleton (Ministry of Labour), and others too numerous to mention. It had been extraordinarily interesting and instructive to hear later the summing up of some of these meetings made by Mr. Stuart Bunning, the Head of the staff side. An ex-postman and a man of many harsh experiences, he had raised himself to become the Chairman of the Parliamentary Labour Committee, and was admittedly the most resourceful advocate among us. He was not 'Red' but 'Left', very clever and witty, and as sharp as any lawyer in debate.

The other half of my experience had been gained as chairman in staff-committee work prior to the general meetings of staffs and heads, but only when every grade of every kind of staff in the Civil Service had been represented in these staff debates could one gauge the significance of the whole problem. For me it had been a twofold revelation: first, of the complexity of the problem itself, and second, of the psychology of men and women. As chairman of the preliminary staff committees I had learned when to wait patiently, when to give a man rope with which to hang himself, when to put my foot down, and how. Very early I had also learned to keep an open mind for every man's words and to recognize types: the theorist, the obstinate self-seeker, the quiet, sound man and good fellow, the born administrator, and the excitable partisan.

Yes, I thought, surely I have found another link and gathered it up with the rest. As potential head of a new harbour department I should have to deal at once with all sorts and conditions of men, and what better experience could possibly have befallen me—unsought, too, and most unexpected? Well indeed, as I was to learn later, had it been for me to have gained such wide psychological and administrative knowledge before going to India, for with this behind me as well as my experience of 'works' staff—from a stoker to a ship's chief engineer and a deckhand to a master, from a labourer to the skilled craftsman and the wise and capable general foreman of works—I felt reasonably confident of my ability to handle the job, though I had still to learn that the Higher Division was not the I.C.S., nor the Indian P.W.D. the Admiralty, nor East West, nor the class division in England the caste division in India.

Finally, the terms offered were generous, for the Government of Madras had asked especially for an experienced man of forty years or so and were willing to pay him well, and I decided tentatively to go if the M.O. would pass me 'fit'. But on reaching home a day or two later, I was to receive my orders from that disturbing element of 'fate knocking at the door'. My sister Mary came running to let me in, her eyes alight and a teacup in her hand. 'You will go to India,' she announced; 'see what was left in my cup!' And there, believe it or not, almost as if drawn to scale, was a map of India lined and blocked out by spent leaves, even with Ceylon in good proportion and in its right place! 'How can you

doubt *now?*' she said. And indeed, how could I, when, not long after, the doctors passed me fit for service, with a friendly hint not to overdo it and to 'get up to the hills when you get a chance'. And that was that. For better or for worse Fate had won against prudence, and in a few weeks I was eastward bound.

CHAPTER EIGHT

RIDING THE BAR

My first voyage to India was uneventful and I remember little about it. Certainly I read much, including for the first time a sober study of Mesmer and mesmerism, and I deliberately refrained from speculating about harbours and my work to be. Indeed, I had long discovered that prior theories always broke down when one came to study sites and their several diversities. I had, of course, been primed by the India Office on certain points of procedure, and others had arisen over the signing of my agreement. One of these I record as illustrating how my intensive work on staff problems came immediately to my need. While being specifically graded and paid as a Superintending Civil Engineer, the agreement specified that I was to be appointed, in general terms, as 'a Civil Engineer for harbour duty', etc., etc. To this I ventured to observe that as there was as yet no other civil engineer for harbour duties the sentence should read '*the* Civil Engineer for harbour duty', knowing only too well how the looser wording might bring trouble later on. I gave the India Office official some particulars of cases in point and he accepted the amendment, being himself an experienced and far-seeing staff officer.

My first impression of India was disappointing. As we approached Bombay from the south I could see only a long, low strip of land and a few buildings almost sitting in the water set in a trying glare of whitish-yellow sunlight over a still sea. I discovered, too, that Bombay was not really a 'harbour' but, as its Portuguese name implies, 'a good bay' (*bom baia*). There are, of course, enclosed docks or basins along the western shore of this bay, which is about five miles wide across its entrance. As the bay opened up before us, however, we saw at once something of the scale of the city and realized that we had been looking at Colaba Point, with Back Bay immediately behind it to the north-west.

My two days' stay in Bombay, where I explored several districts on foot, had exploded all my notions of a romantic and

mystical East. The dirty bazaars and markets, the noises, the spitting, the raucous voices, the glistening, sweaty bodies: is this, I thought, the *real* India? I was wrong, of course: there were several other Indias, and I saw one of them before I left by the night train for Madras. The station had already been crowded densely with what looked like ascetic priests in white clothes and caps, and there was a sustained booming of tense conversation which reminded me of a deep pedal note on a cathedral organ. When, with some effort, I gained access to the platform, I found it, too, packed with the same grim and nervously excited people. At last I discovered my carriage with an army officer at the door watching the scene with an inscrutable expression.

On enquiry I was told that Mrs. Annie Besant was on the same train. I knew of her as an ardent associate of Charles Bradlaugh and then as a theosophist and pupil of Madame Blavatsky, of course, but in the midst of a great war at home I had not known that she had become the President of the Indian National Congress in 1917 and was interned in a house at Ootacamund by Lord Pentland in the same year. These two events had raised her to the rank of a feminine prophet and martyr in the eyes of India; and as such had exalted her to a station or state above that of human beings. 'All India loves a saint,' as I was told afterwards.

I shall never forget that journey to Madras; there were four of us in a carriage, mine one of the top berths. The night was comfortable enough, but the next day, for me, horrible. My companions took it all easily: filled the lavatory basin, a large one, with chunks of ice and bottles of beer, talked, smoked, and dozed while I lay sweltering in European clothes and becoming conscious of a strain on my heart which I had always half-feared from the heat of India. However, with a short twilight and a long drink of weak whisky and cold soda-water the tension eased. Relieved of glare and strain, witnessing a deeply flushed horizon giving place to stars and the rising moon, I discovered a third India, a land of mystery in a moonlit stillness.

I arrived in Madras early on 4th April, where, after bathing and breakfasting, I drove direct to Government House. There I signed the visitors' book, left a card on the Staff and, in so doing, ran into the very man I wished to see, His Excellency's Private Secretary. 'Oh,' he said, 'you had better come in. I believe Lord Willingdon would like to see you.' Under advice at the India Office I had

desired merely to ask the Private Secretary a few questions about Government House procedure, and this swift ascent to the Governor himself surprised me. However, it was a happy chance, for I found 'H.E.'—who had recently been Governor of the Bombay Presidency—a most understanding person who sensed what he wanted to know of you without your being fully aware of his purpose, and with a frank and charming courtesy that disarmed embarrassment.

I think we talked for fifteen or twenty minutes of my journey, of cricket, of plays; a little of myself and my work in London, and of his desire to make a first class harbour at Cochin on the Malabar Coast—'*a wonderful place*'. Afterwards I was taken to see Her Excellency, who quickly drew from me the facts that I knew something about music; that I did not hunt or play polo but preferred cricket or rowing or golf and walking; that I knew little of post-war dancing, but could put on a modest amateur play and conduct an orchestra.¹ Finally Her Excellency asked me to come to lunch and said, 'His Excellency is very keen on that harbour at Cochin, you know'—with a nod and a look which conveyed even more than the words.

During this short interview Lady Willingdon had kept an all-comprehending glance upon my face, my hands and feet and clothes, while I could with difficulty look elsewhere than into her eyes, which were tawny brown with golden lights in them; eyes that flashed when she smiled, and (I thought) perhaps at other times. Need I say that I was cheered by my reception and resolved to make Cochin—that '*wonderful place*'—my first adventure, if it proved to be practicable, though I could promise nothing until I had seen it. 'Then see it soon,' said Her Excellency as I left.

From Government House I drove with the Private Secretary to the Madras Club, where he put me up as a temporary member and resident, pending formal election, and thence to the Headquarters of the Public Works Department, under whose ægis I was to serve for a time.

The P.W.D. Offices were housed in a fine red block of Indian architecture on the Marina, with the Indian Ocean thrashing the wide yellow beach of sand in front. The Chief Secretary P.W.D. to whom I reported my arrival was a Chief Engineer of the

¹ I had had some training under Martin Shaw and Gordon Craig in the Purcell Revival Company twenty years before.

P.W.D., a man of fifty perhaps, strongly built, forceful, and direct. He had himself pressed for my appointment, knowing that his Department had no expressly trained harbour men, though some had made reports on Cochin in the past. He suggested that I should spend a week reading all the port files before making my first tour of inspection, when he proposed to accompany me if possible. He then gave me a large corner in his own room where a stack of files and 'confidential' locked boxes had been placed beside a table awaiting my arrival. I liked him at once, for my six years' experience of Scots at Rosyth helped me to see him behind his dogmatism and aggression, which he later admitted, saying it was due to constant political pinpricks; interferences by people who knew nothing about 'works', and whom he could not suffer gladly. He took me into other rooms where I met several of his staff, men whose type I knew so well, friendly and quietly competent, if somewhat weary, or so it seemed to me after the bustle of a war-time Admiralty.

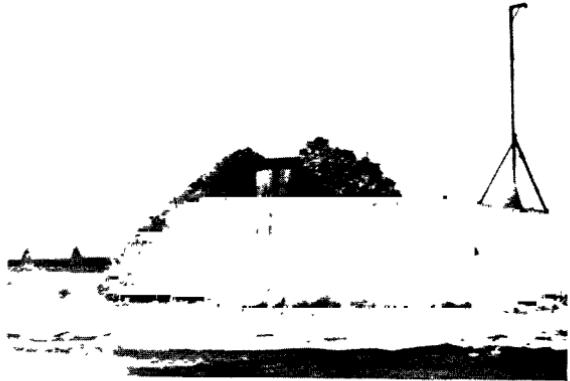
At my desk I found files and yet more files; white papers and pink papers, departmental minutes, Government Orders, executive reports, railway reports, Chamber of Commerce reports, rolls and rolls of plans and maps, reports of consulting engineers, minutes of Cabinet meetings, gazetteers; particulars of ports on the east coast, ports on the west coast, proposed canals, and proposed new developments at Rameswaram, Cochin, Tuticorin, Vizagapatam, Malpe, Mangalore, Cocanada, Cuddalore, Negapatam, and others; how on earth was I to deal with such an overflowing family of ports? Not that the reading matter was uninteresting; it was in fact absorbing and exciting, and I revelled in it: the engineering aspect and the commercial, the political and the administrative, the conflicting interests of various shippers, the jealousies between ports and railways.

Some of the bound reports I took back to my room at the Club and there read far into the night until the mosquitoes became unendurable. However, I soon realized that except, apparently, for a most formidable ridge of rock-like sand guarding its entrance, Cochin stood out above the others from every point of view, and that 'go to Cochin and see it soon' was the right advice. Mr. Hutton had also come to the same conclusion, and so it was that we left Madras on 12th April, and after a four-hundred-mile journey across country arrived at Cochin the following afternoon.



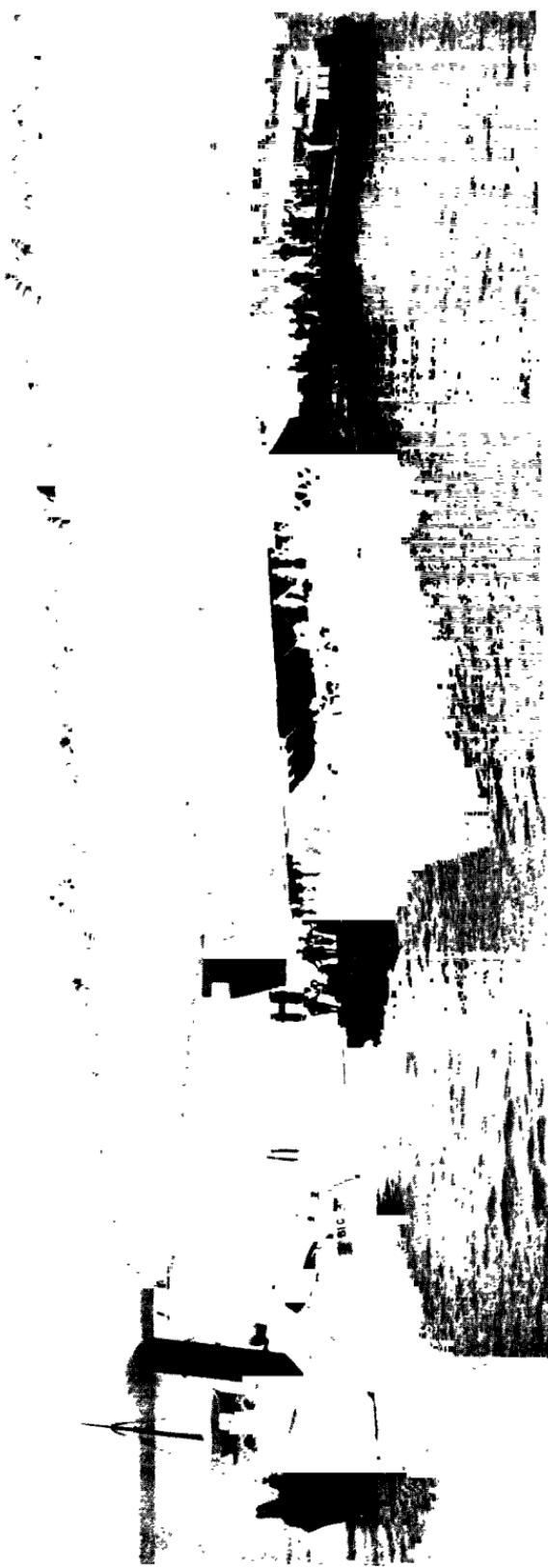
The dredger *Lord Willingdon* returning to harbour

Close-up view of the discharge end of the dredger's pipe-line



The dredger's pipe-line discharging full bore





Floating out one of the completed girder spans of the road-rail bridge

A PERSONAL NARRATIVE

A small launch, the *Vasco*, met us at the terminal station (Ernakulam), and in a few minutes we were chugging across the calm waters of Cochin Harbour and marvelling at its scope. It seemed as if all the blue lagoons of the southern seas had come to rest in the wide bosom of Mother India at Cochin, for on each side there stretched an interminable vista fading only into the sky itself, while bordering these sheets of still waters grew and flourished all the palms of the world. In the farthest distance at one point there appeared a faint mirage of trees over an invisible horizon. 'Wonderful'? Yes; full of wonder indeed; and three miles westward a narrow break in the line of palms betokened an entrance from the sea.

The town of British Cochin, as it was known then, lay for the most part at the mouth of the harbour and on its southern side. There was a small section immediately opposite on the northern side, and a small island a mile or so eastward within the backwaters. These were called Vaipin and Candle Island respectively, and the three units comprised one square mile of British territory, the remainder being within the Indian State of Cochin, a practically autonomous body having its own Ruler and a Chief Minister of State. A line drawn round the three units enclosed so much of the inland waterway as fell within British limits; seaward, as far as the three-mile limit, the Government of India claimed jurisdiction and international rights from the northernmost to the southernmost tips of British Cochin. The complications arising from the division of the harbour waters into two sections under separate codes of civil and criminal jurisdiction will be examined in their place. I was as yet blind to them.

Our kind host and hostess at Cochin made us very comfortable in a fine old Dutch-type bungalow surrounded by verandahs and shuttered casements, and overlooking the harbour entrance. Mr. W. T. Anderson, our host, was then the Hon. Secretary to the Cochin Chamber of Commerce, and gave us an informative account of its functions and interests. It was from this first experience that I began to realize that my work would be far wider in scope than I had foreseen. In my ignorance I had imagined a Government approving or disapproving my designs and estimates and, if approving them, ordering the work to be done by my staff out of funds directly controlled by Government. Now I saw that I might first have to become the scheme's

protagonist, unifying all views and interests; moreover, this impression deepened as I moved about and met others informally in order to hear their several ideas. Apparently, too, any funds advanced by Government would have to be repaid from certain dues collected by the port, which varied according to the nature and tonnage of freight handled, imports, and exports. And these dues were jealously guarded by a local Landing and Shipping Committee consisting largely of the merchants themselves. This realization made me very preoccupied during that first visit; I had come to India under a wrong conception of my responsibilities, and was not sure that I could shoulder them as I ought.

The next morning I went to sea in the *Vasco* studying the wave action over the bar. I had retired soon after dinner the previous night in order to clear my own mind of its doubts and fears. After some hours of thought I reduced the issues to two: first, could a proper major port be built and how, looked at from the professional standpoint alone? As to this I would take my own line entirely and act accordingly. Second, could the views of merchants and others be brought into some sort of agreement with mine? As to this I would accept any suggestion provided only it were sound and useful, that is, in the public interest, and not that of a few. If neither of these issues was conceded I would respectfully decline to be associated with the proposal and ask for further instructions.

It was with a lighter heart, therefore, that I set out to test the wave action over that formidable ridge of heavy and densely packed sand which I knew guarded the Cochin entrance against all ships drawing more than eight or nine feet of water, at high water, and which had intimidated Governments and Civil Engineers for sixty years. It was now mid-April, and I at once realized that with such a long swell coming over the crest from west-south-west no 'hopper' suction dredger could work in such a position. Had the bottom been soft mud, or even a silty sand, the swell would have been degraded somewhat, and the dredging gear might have stood a few bumps, but with a bottom almost like rock I would not chance it. As we approached the bar, the sea suddenly rose before us like a wall of green water seven or eight feet high, and although our tiny launch rode it safely, once was enough, and before the next big roller came we had recrossed the bar homeward. That one experience settled three things: first, that

regular dredging must cease not only before the monsoon in June, but before April, and that a very careful survey of wind and wave-action must precede any big expenditure; second, that any new dredger must be able to cross the bar at any stage of the tide; third, that I must prevent any action being taken on a previous proposal to buy a big self-loading hopper dredger at a cost (in 1919) of £300,000, as it would be dangerous to use it in such a place when loaded because of its increased draught.

One other question called for an immediate settlement. It concerned the safety of that long tongue of sandy soil reaching south to British territory at Vaipin. Over many years this natural northern breakwater had been losing its soil during the monsoon period; a church, it was said, had been lost to the encroaching sea and lay buried several hundred yards away from shore; the dismayed villagers gazed every year at their plots of land and coconut groves as they became undermined and sucked away by a boiling sea, and the Revenue Department of the Cochin State suffered a loss from ground rents every year. In 1862 the sea had actually broken through the spit at a place called Cruz Milagre, a mile and a quarter north of the harbour entrance. About seven years previously the P.W.D. had built a dyke of sand revetted on both sides with laterite¹ blocks, and this had proved reasonably successful wherever it had been properly maintained and its 'toe' protected. But north of this dam the erosion still continued, and the whole question had been a matter of acute dissension between civil engineers for seventy years. One opinion was that nothing but a solid continuous barrier with its outward toe protected by random stone blocks would be effective; another view, strongly expressed by the then Chief Engineer to the Cochin State, favoured a series of 'long, low, adjustable groynes' running out to sea but joined above high water by a longitudinal dwarf barrier.

My appointment had been made through the Consulting Engineers to the Government of India.² A report by this firm dated January 1918 had been handed to me for general guidance on my arrival at Madras, and this report favoured the second of the two methods. However, both Mr. Hutton and I were of the opinion that no considerable expense should be incurred without making a trial, in the cheapest way possible, of the Consulting

¹ Laterite: a hardened brick earth.

² Messrs. Sir John Wolfe Barry and Partners.

Engineers' recommendation, and before the monsoon broke in June. I was doubtful of the results myself because all my experience in the Admiralty had led me to suppose that this system applied especially, if not only, to places wherein a marked littoral drift carried particles of the beach in one direction or another. However, we set to work shortly after and built a fair section of trial groynes as recommended, twelve or thirteen of them.

Prior to the monsoon, which started this year on June 3rd, some of these groynes were accumulating sand and mud below low water level, a few inches at each; but when the monsoon burst, a heavy sea with crests about parallel with the shore-line dragged the sand down and ate its way inland with great rapidity. In two weeks the beach level was lowered by two or three feet, and it was quite obvious that the wave action was disruptive rather than erosive. I tested this also by walking for two hours through the seas in shorts and shirt (when the waves had subsided somewhat) and by standing still in many places up to my waist—feeling the sand-drift play on my legs from toes to knees. In every case the action at sea-bed level was up and down the beach, not sidelong. Incidentally, this very practical test eroded the skin on both legs and gave me acute pain for weeks afterwards.

A barrier, then; but what kind of a barrier? This was the problem which occupied my mind from the first, but particularly when the monsoon burst in June and it became clear that the real forces at work had not been wholly diagnosed. As will be seen, we solved the problem quickly; but I had never been really worried about it, for I had up my sleeve at least two methods which I knew would work, though at a much greater cost. The real problem was not the erosion, but the least expensive method of stopping it.

Before returning to Madras I scouted round the district and obtained many informal views as to the port's deficiencies and immediate requirements. I found much diversity of opinion; the existing facilities were out of date and the port area so backward in development that I should have liked to pull it all down and start anew. As, however, I knew that Government would wish me to suggest a less drastic opinion I narrowed my views to the building of better godowns and warehouses with a deep wharf or jetty alongside, which could be included in whatever major scheme might follow.

A PERSONAL NARRATIVE

The dredging work clearly demanded prior experiment; and, as I have said, I was not really surprised or worried about the erosion. What did surprise me were the nebulous opinions and pre-judgements of many in so small a place. I had thought that no European could be ignorant of the first needs of a modern port. Indeed, there seemed to be uncertainty and agnosticism as to anything I mentioned, and I foresaw a good deal of committee work, perhaps very contentious, ahead of me. However, as I recalled my 'Whitley' experiences, this did not worry me either.

It remained for a lady, and one wholly dissociated from port interests, to administer a specific opinion. 'Don't you think,' she said, 'a busy and dirty modern port in this beautiful backwater will spoil its restful charm? Is it really essential? Of course, much they do here is out-of-date, but then we are all out-of-date, and it is a very happy state to be in. Why change it?' I replied that I thought British Cochin itself was hardly a thing of beauty or a joy for ever, and that the port waters in any case would comprise but a tiny fraction of the backwater system.

I did not tell her that my first conception of Cochin harbour was in terms of a naval as well as a mercantile port, which was not unnatural in one of my experience. Nor did I discuss the possibilities of another war, a war which would send its dreads and alarms into Cochin itself. But I had good reasons for believing it would come. During my last attendance at the Admiralty Staff Conference in December 1919, and speaking of the improbability of any fall in the cost of living, I quoted the evidence of certain economic graphs I had made which showed beyond any reasonable doubt that a crisis in world affairs had been obvious since the year 1910. I said, as nearly as I can remember them, these words: 'Some of us who have had cause to study graphs can see no prospects of a lasting peace. Wars are largely the result of economic troubles and I, for one, foresee another war in twenty years, and probably a greater one.' These remarks were received with polite incredulity, but in 1921 the Oxford University Press published a School Economic Atlas by J. G. Bartholomew which, on page 1, gave figures and graphs to justify all that I had said, though without drawing any conclusions from them. (I make no claim for prophetic insight; but, as we all know, war came just before the twenty years had expired.)

After staying a week or ten days in Cochin, and with my head

COCHIN SAGA

full of impressions and ideas, I boarded the train for Madras: a train hot as a bakery from waiting in the sun and having no fans in the carriage. A crunchy red gravel approach, an Anglo-Indian guard in clean white uniform, a green flag, a whistle, a jerky pull, and we were off. I lit a cheroot, settled on my couch, and gazed at a dreaming landscape of green paddy-fields under a cloudless sky until it was time to open the tiffin basket.

CHAPTER NINE

BARS AND ZARIBAS

THE next few weeks covered a period of continuous enlightenment on many fronts. In anticipation of requirements Mr. Hutton had already selected an Assistant Engineer, P.W.D.,¹ to be Resident Engineer at Cochin, with a works overseer and a few clerks. In accordance with the general practice, one of these was to be my own 'writer' or secretary, travelling with me wherever I went, aided by two 'peons' or general bearers and messengers, while I engaged an experienced travelling servant on my own account to look after my personal wants and belongings. I handed Mr. Hutton a note of my visit and tentative proposals, among which was a definite recommendation that an *ad hoc* Committee should be constituted with a view to focusing the ideas of all primarily concerned in the project, 'unless,' I added verbally, 'Government objects, and would prefer to settle it themselves with my advice and assistance.'

Apparently Mr. Hutton thought this direct method of attacking the problem savoured of shock tactics. 'Do you really think,' he said, 'you will ever get an *agreement* among all those interested? Frankly I doubt it; you don't know what you are up against.' I replied that unless Government proposed to dispense with local ideas entirely I thought that the wisest and strongest action would be as I had suggested, and that I was confident it would bring matters to a head. If the results were positive, well and good; if negative or contradictory, Government could take its own line 'on wider grounds of public utility.' 'H'm,' he observed, 'this is a bit sudden; I wonder how my colleagues will take it? Look here, as soon as you can, get away to Cochin again. Sound the Diwan of Cochin State and that Chamber of Commerce man who put us up. And let me know what land you would need for your wharf and buildings. We own some of the frontage, you know; the existing Customs Wharf, for example.'

Meanwhile His Excellency and Staff had already gone to the

¹ Mr. F. G. Dickinson, M.C., B.Sc., A.M.I.C.E.

hill station of Ootacamund for the usual summer 'exodus', and I was greatly relieved to hear that permission to follow with the Heads of other departments would soon be extended to me. I had not asked for this, but I had already realized that the summer heat was greater even than I had anticipated, and that something must be done about it. Fate, or perhaps that kindly M.O. at the India Office, I thought, had had a hand in this; but I was wrong. It was Lady Willingdon who had told His Excellency that I might be useful socially, and he had dropped a hint in the right official ear. At the same time, however, he wished to have me near him, or whoever took over the Marine Portfolio from him.

The Diwan (Chief Minister) of Cochin State¹ was then an officer of the British Service lent to Cochin, and held very wide powers. He served the Rajah or Maharajah on one side and maintained contact with the British Resident (later Crown Representative) on the other. I found him most responsive and accommodating and, a little to my surprise, possessed of a quick turn of English humour. Cochin State itself covered about fifteen hundred square miles, much of it virgin forest. The Ruler was the spiritual as well as temporal Head of the State, and succession came through the eldest sisters' eldest sons, the heirs-apparent being known as the Elaya Rajahs. The State had a good record of order, literacy, and industry—principally agricultural.

On the subject of the general competence of Cochin to become a major port, and piecing together the gist of several conversations with the Diwan, it transpired that Cochin was the most literate State in India, British or Indian, and also one of the most prolific.

'That seems a dangerous combination, Diwan Sahib. I suppose jealousies among the different castes will cancel out any possible co-ordination, politically?'

'The caste system will become less rigid, and may disappear in a century or two, except perhaps between Hindu and Mohammedan. That is deeper laid in religious soils which are, so to speak, chemically explosive. Fortunately in Cochin our interests do not clash. Ernakulam, largely Hindu, has its role of education and administration, and Muttancherry, largely Mohammedan, its tradition of trade. We do not want Ernakulam to become a home for wharves and factories and warehouses.'

¹ The late Sir Vijaya Ragahava Acharya, K.B.E.

A PERSONAL NARRATIVE

‘Apart from education in schools, what of your technical trades and professions?’

‘We have good lawyers and doctors, good farmers of their kind, and good carpenters. The lawyers and doctors, or some of them, go to Europe for their training, but I do not think there is much evidence here of engineering or architectural ability. There have been few occasions for it. We are a primitive agricultural people, seen by modern eyes, but I think we are adaptable and quick to learn.’

‘Yes, I notice that even your methods of irrigation date from the ancient Nile, though many of your people certainly look artistically minded.’

‘They do, and they are. By the way, the health of Ernakulam has greatly improved since the water-main was laid from the Alwaye River.’

‘Will you ever get the water over the backwaters to Muttancherry and British Cochin?’

‘Yes. If you will provide the bridge!’

‘I will try, and that opens the subject of communications. I notice there is only a metre-gauge connexion to Ernakulam and that the main road is broken by two rivers, or arms of rivers. What are the prospects of bridging these?’

‘It is a difficult problem because the neighbouring state of Travancore is also concerned, and negotiations with them are always hampered by old suspicions and antipathies. Best not to force the pace. If Cochin becomes a great port the problem may solve itself automatically. At present the boundary between the two States passes down the centre of the river and I fear there may be trouble with Travancore.’

‘That is awkward. Tell me, Diwan Sahib, what is your own view as to this coast and its potentialities, compared, say, with the Madras side? Do you think we have sufficient public spirit and ability to carry out large public works, and then to maintain them, and administer them? I must confess I have been rather depressed by the obvious lack of public spirit in municipal affairs in Cochin.’

‘Well, you must not expect too much, and your record in England is not free from criticism. I seem to remember some passages in *Oliver Twist* and elsewhere which suggest that in their early days your local bodies were not above turning a dishonest penny and muddling through generally.’

The Diwan's eyes twinkled.

'I'm afraid you have me there, Diwan. You think, then, it is only a matter of time: that they are young, inexperienced, and so on?'

'I think human nature is much the same everywhere. People have to grow up and suffer their growing pains. I have no doubt whatever that the Malabar or Kerala people are the equal of any in the south of India, and if Madras can manage a harbour, Cochin certainly can—that is, if you can build it.' And the Diwan twinkled again.

'I believe I can, but it is going to be a difficult job, for one reason because there is nothing to start from; no plant, no harbour-trained men, no docks, workshops, or anything else, and no facilities equal to the first tasks even.'

'That is so; but then that is why you are here. So far as I can see, your own efforts and your own results should provide a standard which will leaven the inefficiency you see around you. Cochin, in this respect, will be very largely what you make it. What are you going to do first?'

'I have received much conflicting evidence and advice. So I shall ask the Government of Madras to set up an *ad hoc* Committee to report on the whole subject, the members to be drawn from every interest concerned.'

'That seems to be a good beginning: grasp the nettle firmly, you know.'

'And I am going to ask the Madras Government to make sure you are put on the Committee yourself!'

'Oh!' said the Diwan, looking thoughtfully out of the window.

It was fortunate for Cochin that the State had, at that time, a Diwan of the British Service, both clever and helpful, who was not a Cochinite and could survey the problem with detachment.

From these interviews with the Diwan I felt convinced of his helpful co-operation, but in British Cochin there was still no sign of support. I called to see Mr. W. T. Anderson as instructed, and after a few general remarks it so happened that we drifted into a conversation which gave me all the clues I needed. He opened the discussion.

'I noticed that you were spending a long time at the new Customs Wharf yesterday and to-day. Might one ask if that place has any special significance from a harbour point of view?'

A PERSONAL NARRATIVE

‘Yes; it has a significance. It is Government property and the business premises next to it are also on Government land. The two blocks form a possible site for new warehouses with a deep-water jetty thrown out from the shore.’

‘A deep-water jetty! Are you thinking, then, of bringing ocean-going vessels alongside the shore at that point?’

‘Why, naturally. That is what a modern harbour is built for.’

Mr. Anderson looked thoughtful for a few moments and then remarked:

‘Well, that suits me all right, because I don’t own any lighters myself, and have to hire them, but I’m afraid you are in for trouble. The lighter trade is a very profitable one, as you may know.’

‘No. I did not know. Who are the firms principally concerned?’

‘Oh, all the shipping agents. You see, we others can’t ship our stuff abroad except through the shipping agent. He reserves space for us and has the right, as agent, to put the goods on board and charge us with lighterage.’

‘I suppose that applies at other ports and roadsteads, and is a long-established custom?’

‘That is so; in this Presidency, anyway.’

‘Someone was saying at the Club last night that all they wanted here was a “good large pool” inside the mouth of the harbour where ships could lie at anchor. Obviously that perpetuates the lighterage.’

‘Quite,’ said Mr. Anderson, laughing; ‘that is the whole point of the suggestion. But tell me, do you honestly think that the outer bar can be cut through and a channel maintained during our heavy monsoon? It would be an awful smash if you failed.’

‘It will be difficult, no doubt, but my previous experience tells me that it is possible, though of course it may cost a good deal.’

‘Then why add to the cost by constructing expensive wharves or jetties inside? Why not let sleeping dogs lie, and give Cochin its “pool”? Not that I want a pool: I should like to see a pukkah harbour, personally.’

‘I suppose the Madras Government will have to settle that as a point of policy, but speaking for myself only, the cost and labour of the outside dredging will be such that I think there is no point in making a proper harbour unless the ship is put alongside a

wharf, and in time a main road and railway. Moreover, the cost of jetties will be largely offset by the cost of your permanent moorings if the ships have to lie in stream.'

Mr. Anderson turned to a map of South India that was lying on the table and studied it for a little while. He continued:

'I am afraid the idea of putting the ship alongside the shore and a railway is going to upset other apple-carts. You will probably start drawing traffic from other Malabar roadsteads, especially in the monsoon. It may even affect Madras, and my people there may not like the idea at all. In fact I can foresee quite a lot of trouble in Madras, and possibly in Bombay.'

'That is as may be, but I came to India to build a port on the lines of the Wolfe Barry report. That report indicates deep wharves, and extensive ones. I am certainly not going to undertake the risk and responsibility of dredging the outer channel merely to provide a "pool" when your lighters can still go out to ships in the roadstead as they have in the past. If the Madras Government, after hearing all the pros and cons, decide that that is what they want, then I think I shall have to go home and leave it to someone else.'

'Well; that's straight enough. Have you made up your mind as to what to do next, if one may ask?'

'Certainly; I propose to ask Government to set up a fully representative *ad hoc* Committee with specific terms of reference and see what comes of it. How does that strike you?'

Mr. Anderson, who was a good poker player, kept a stolid face for a while and then broke into a grim smile.

'Strikes me all of a heap, and I think you are in for a lively time; but the idea's right enough and I think the Chamber of Commerce, if well represented on the Committee, will welcome it. In fact I am sure they will.'

'Good; I thought so. And I rather like lively committees. They can be so deadly dull, don't you think?'

So there lay the root trouble. A proper modern harbour would threaten the well-established interests of the shipping agents. Ships had always anchored three miles out to seaward, and a lucrative business had been built up by transporting goods in lighters to and from godowns built alongside the existing shallow wharves. Auxiliary charges for tugs, tarpaulins, and storage areas might also be liquidated, at least partly. The shipping agents, as

A PERSONAL NARRATIVE

usual, knew where the shoe pinched, even though the ship-owners might well prefer a modern harbour.

The next morning brought fresh complications. I sat in my new office in the P.W.D. rest-house thinking over the conversation I had had with the Diwan, and his desire to save Ernakulam from the encroachments of wharves and warehouses. It seemed hotter than ever; there was no breeze and I was already sticky with perspiration, so that thinking at all became laborious. But I had realized that in the Wolfe Barry report Ernakulam had been specifically shown as one area of port development, and here again was a possible source of controversy as between the purely engineering and the administrative points of view. Whilst pondering over this a visitor arrived with a proposition of his own which bore on the same issue. I had met him once before and had heard much about him, which prompted me to keep a careful note of the interview.

'Good morning, Mr. Bristow. My name is X, as you know. They told me you were busy, but I have come to see you about a plan which I believe you will welcome. It will save you a lot of money, and I know you are all out for economy. May I tell you all about it?'

'Well, that sounds good to me. What is it?'

'Have you got the Wolfe Barry plan here? Yes, I see you have. May I use it? . . . Here—you know all about it, of course—is the frontage proposed to be acquired at Ernakulam. Do you know, however, that this is the most expensive site you could possibly choose? Inhabited by all the rich people of the town?'

'Is that really so? I did not know it.'

'Ah! I thought not. Well, here is my suggestion. Buy *this* frontage, immediately south of it. Here you have a much poorer class of people, fishermen and such-like. The land will be cheaper and you will avoid all the trouble which will inevitably arise if you try to turn the best of Ernakulam into a wharf.'

'That sounds reasonable. Would you like to take me there and explain it all on the site?'

'Delighted. Will you come at once?'

'No, I happen to be lunching with the Resident to-day, but I will come on afterwards, if that will suit you?'

'Oh, quite.'

Lunching at the Residency was a pleasant affair. The house had been the original seat of the old Dutch Viceroy and was set in park-like grounds on the island of Bolghatty, near the Ernakulam side of the backwaters. The cuisine was simply good, and the hosts as charming as the place they lived in. By their courtesy the grounds had been lent for the making of a small golf-course which was to become a boon to many, especially myself.

The Resident's face clouded over as the incidents of the morning were related to him in a talk after lunch.

'I distrust that man, and would not say so unless I had evidence. I would like to see him out of India. What do you propose to do?'

'Well, I have examined the chart, and so far as I can see, there is no objection to his proposal from the engineering standpoint. It means perhaps half a mile more channel, but the water is naturally deep and will, I think, maintain itself.'

The Resident mused. 'I am sure there is a catch in it somewhere. Do you mind if I come with you this afternoon?'

'I should be grateful if you would, sir. I confess I did not like the cut of his jib myself.'

'It will be something to do with land purchase,' said the Resident. 'I wonder what he is up to now? Have you settled where the wharf is to go?'

'No; that will be for the proposed *ad hoc* Committee to discuss.'

'But have you formed any tentative opinion, yourself? Have you given anyone a hint?'

'Not about this. The only plan I have conceived so far concerns the wharf at British Cochin, where the land already belongs to Government.'

'Good,' said the Resident. 'We will hear what he has to say.'

The route to site number two led through the densely packed and narrow streets of Ernakulam, burning in the afternoon sun. First there was the pleasant sea frontage open to the west; southward of this came the better houses, modestly tucked away in coconut groves stretching to the backwater margins, and presently a poorer quarter thronging with life, through which the car proceeded with continuous hooting and barely diminished speed until it reached an opening by the waters.

There could be little doubt that this, the alternative site, would be cheaper, and perhaps more suitable, being farther away from

the administrative and residential area, and alongside deeper water. It did not need the assurances of any interested party to emphasize this.

The Resident leaned forward.

'Tell me, Mr. X., you have probably some idea of what this land is worth. Could you give us a rough figure?'

Mr. X. was not to be caught.

'Oh well, you know, all the land here is rising in price, rapidly rising. . . . I could not give definite figures, but certainly you would have to pay only half, or say two-thirds or three-quarters, of the cost of the other site.'

'And that would cost, what? Six thousand rupees an acre, roughly?' said the Resident.

'Ah! but then think of the rising values, and compensation for compulsory purchase, cost of buildings, and so on. Much more than that, I should say, *much* more. . . . This is the place; don't you think so yourself, Mr. Bristow?'

'Well: we don't know yet if we shall need a wharf at Ernakulam, and all sorts of other questions arise: levels, drainage, railways, and so on; but I agree it is a site worth considering when the time comes, if it ever does.'

'But the Wolfe Barry report *shows* wharves on this side?'

'That is so; but the report is subject to confirmation and agreement by Government.'

'Quite,' put in the Resident. 'Well, thanks very much, Mr. X., for bringing us out. I thought I ought to see the place, as the request for acquisition, if it comes, will probably pass through me. Good-bye.'

The Residency peons set a table under the trees as the sun went down in a blaze of blinding white light; brought a tray with a decanter of whisky, a box of cigarettes, and some soda-water; turned to the monumental base of the flag-staff and held the halliards; watched for the sun to disappear; lowered the flag, gravely folded it and silently withdrew.

'Well,' said the Resident, 'this is better than Ernakulam on a warmish afternoon. What did you make of it all?'

'The site's all right, apparently, but I thought he was very shifty when you tried to nail him down on the price question.'

'Shifty's the word,' said the Resident. 'I think he has bought or is about to buy that site either for himself, or more probably

or a syndicate or a company of friends. Keep your eye on him.'

'Thank you, sir. I will.'

'And you can drop the "sir",' said the Resident as he lifted the decanter. 'Say "when".'

I left Cochin more convinced than ever that the *ad hoc* Committee must sit soon and work hard. Every week's delay might bring higher prices all round, and not only in land purchase. I had already been sounded as to my attitude towards the purchase of timber, 'something to our mutual advantage,' as the plausible man said who approached me—and was quickly disillusioned. But others might go to work more craftily and 'corner' supplies. I had seen plenty of that in the war and broken more than one local ring nearer home.

Mr. Hutton was pacing up and down his office looking rather like a forceful but frustrated Beethoven. He smoked a Light of Asia cigar and held a large tumbler of cold soda-water in one hand, reserving the other for the more telling emphasis of his points. He had accepted my views as to the need for immediate action and was now explaining the administrative arrangements in the Madras Government.

'You see,' he said, 'your system in the Admiralty is different from ours. You work at widely separate naval ports; we work in what we call circles because we cover the whole ground, what?'

'Then do you have a separate secretarial officer for each circle? In the Admiralty there would be one or more engineering officers doing secretarial work for a group of ports at home or abroad.'

'Oh no! We can't afford that. I am lucky to have one or two engineering assistants, but all the papers have to come to me personally.'

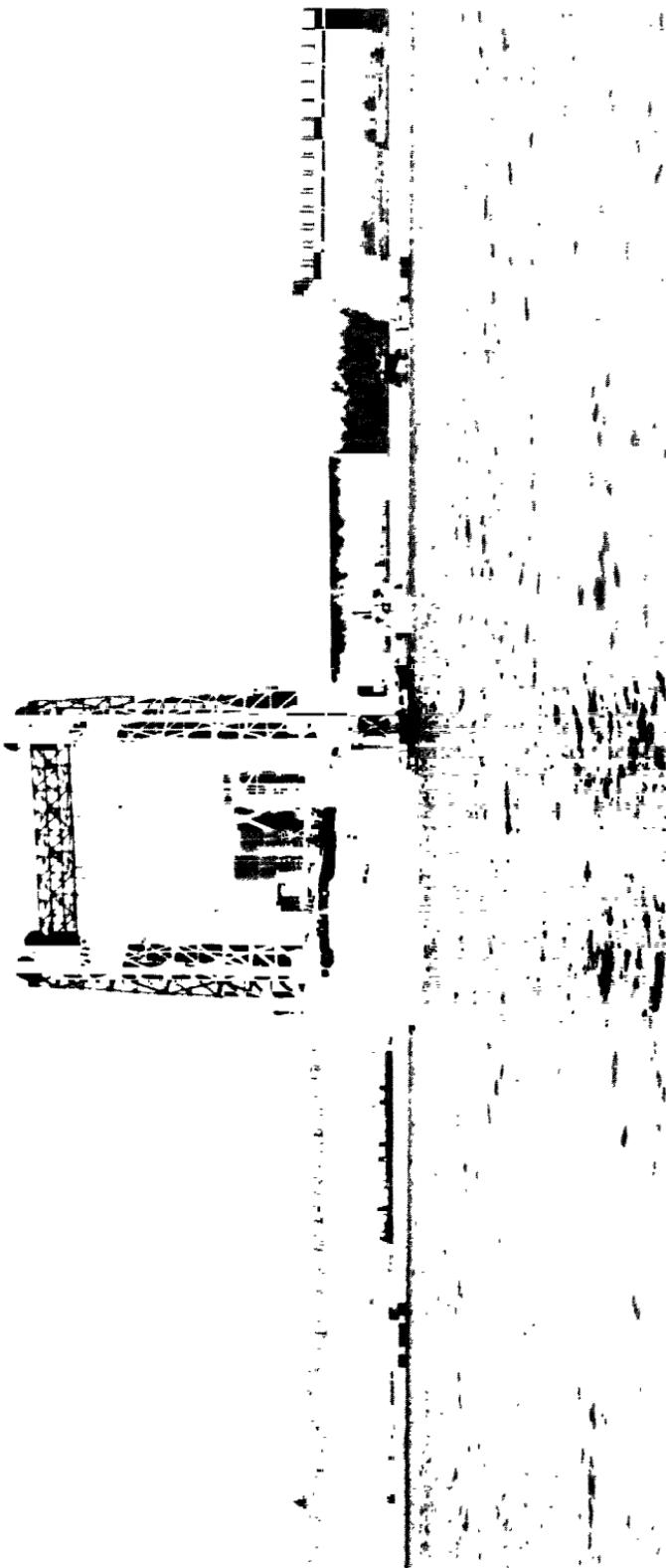
'I notice that you have a great mass of files now. What are they all about?'

'Everything! Let's look at this. Here you are; somebody wants a new bathroom. Plan and estimate. Wants to enclose a bit of his verandah. What's he want a new bathroom for? You see he's already got four, two to each double bedroom. H'm. Probably wants it for a bridge room or something.'

'Do you really mean to say that a thing like that has to come to you, personally? Can't it be disposed of by someone else?'



The test load of the bridge supports



The road-bridge, with the lift-span raised and the *Lord Willingdon* passing through

'Oh no! *Residences*, you see; must check-up on residences. It will also have to go to the Finance Department: question of money, you know.'

'Good Heavens! haven't you got powers to deal with a trifle like that, or an officer acting on your behalf as deputy Secretary?'

'No. It's the same with all others—Forests, Education, Salt, and so on—and now under the Reforms there may be a Public Works Minister from outside as well, a politician.'

'But I thought Lord Willingdon was handling the Marine portfolio himself?'

'That was because Marine is what we now call a reserved subject. These subjects will also pass to a Minister, possibly the Finance Minister himself.'

'I suppose he is not political?'

Mr. Hutton lit another cigar and took a pull at his soda-water.

'No, and there it may be better for us. We shall only have one Minister to go through, and the politicians can't interfere unduly.'

'Let me get this clearly. When I make a report or an estimate it is directed to you, and you deal with it first, then—'

'No. I pass it first to the general office and the drawing office for their remarks.'

'But suppose it is purely a matter of docks or dredging? I thought you said that you and your department knew nothing about dredging? How can your routine staff deal with such a matter?'

'Well, they will just go through it and check it, you know. Then it may go perhaps to one of my assistants, then to me—probably to me direct.'

'And after that?'

'We may have to refer it back to you for further information, but after it passes us it goes to the Finance Department direct, that is if the Minister combines the duties of Finance and Marine.'

'Now we're on the last lap, I hope?'

'Not very likely,' said Mr. Hutton. 'It will go in tappal, as we say, to the Marine Secretary, then to his superintending clerk, who will write a note on it.'

'A note? From what point of view?'

'Oh! any point of view. He may want further information, or suggest the papers should go to the Presidency Port Officer for remarks, or draw attention to some snag or other, what?'

'Then I suppose the Financial Secretary and his "office" add their remarks?'

'That is so, and we don't always agree with him. Then we may talk it over, and if we can't agree it will have to go to the Minister for decision.'

'You mean a decision on the financial issue, I suppose?'

'No, on all issues, if he is Minister for both Finance and Marine. In some cases the decision or order will go to all Ministers and be issued by the Governor in Council.'

'And how long does all this take to go through?'

Mr. Hutton threw away his cigar and finished his soda. 'Come and have lunch with me at the Club. Lutyens is coming and we shall have some fun.'

'Thanks very much. I should love to come.'

Sir Edwin Lutyens was eating oysters cooked as only the Madras Club could cook them in those days. He held his fork in his left hand and made rapid sketches on a sheet of foolscap with his right. Seated at the same table were some half-dozen or more senior Government officers. The talk eddied round modern architecture with the gnome-like Sir Edwin wielding oysters, pencils, papers, and witty nothings in his own vivacious way. He glanced round the table:

'Let's all have a competition,' he said. 'Are we all dining here to-night? Good. Boy! To-night give every master pencils and paper on a dinner-plate. We will all draw war memorials.'

Mr. Hutton spoke in an undertone.

'You were asking about the time it took to get things done,' he said.

'I confess it seems a long routine.'

'Well, out here a great deal depends on the personal factor. If you are blunt like me you may be in for trouble. It's a fact that if people don't like you or don't trust you (and it's much the same thing) they can make a lot of trouble, whatever the system.'

This remark was overheard, and a neighbour added, 'Yes, and you must not have too much personality or imagination, like Lutyens. He gets away with a good deal because after all he is Lutyens. But few others could, and no new-comer.'

Sir Edwin called for more oysters and held up a sketch of a war memorial, done in red and blue chalk.

'There you are: how d'you like that for Madras? Oh! I forgot,

we're having a competition. Boy! remember pencils and paper to-night!"

Mr. Hutton (aside): 'He's forgotten that he dines at G.H.¹ to-night,' and, to his other neighbour, 'Bristow thinks we are too full of red tape, Monty; wants to teach us how to get a move on like they do in the Admiralty. What would you suggest, um?'

'Good God,' said Monty, putting down his glass, 'don't you know you can't hurry the East? This is our wonderful Indian system, isn't it? Fit yourself into it: you certainly can't alter it. I wish you could.'

So there it was, a double if not triple-rowed zariba; first the P.W.D., then Finance-Marine, and finally, perhaps, Finance itself, each with a Secretary, and each Secretary with a clerk-superintendent; and not a single one of them with any knowledge of dredging or port design.

I knew at once that it would be impossible to work such a system and get anything done expeditiously and economically. To me it seemed just as absurd as it would be were the Civil Engineer-in-Chief to the Admiralty forced to submit all designs and estimates for Naval works to H.M. Office of Works and Buildings, and leave it to them first to criticize them if they wished, and second to deal direct with the Lord Commissioners of the Admiralty and H.M. Treasury in all subsequent correspondence. The idea was so preposterous that I knew I could safely leave it to time; but it added another and a serious obstacle to rapid progress. Moreover, I had no intention whatever of serving under such a system. Was I not '*the*' civil engineer for harbour duties? However, I said nothing more then, and by next year both His Excellency and his Council had realized that 'Harbours' must be a separate department working directly under 'Marine'.

A day later we both left for Ootacamund.

¹ Government House.

CURRENTS—AND UNDERCURRENTS

My first visit to the 'Queen of the Nilghiris' worked a magic in me as in so many others. Once over the foot-hills one feels first a physical refreshment which in turn quickens the mind and spirit—repression giving place to expression. Five thousand feet up the rocky gorge one may look back and see a spacious plain, each distance marked, and every tree, house, figure, and river smaller and less plain 'till vision itself melts into distance. . . .' At seven thousand feet one has passed the dark clinging forests, the elephant-coloured perpendicular masses, and lively little cataracts, and come out upon the undulating plateau of Ootacamund. Unfortunately the town itself, about a square mile of it, is but a muddled collection of bits and pieces, from the bazaar shanty and the sordid hut to Government House, with the Government Offices perched on Stonehouse Hill nearby. The better shops lie between, and the houses mostly on easy slopes round about.

No doubt the reaction we feel in the hills is proportional to the tax levied on our different constitutions by the heat of the plains and other discomforts. I reckoned that this tax amounted to one half my usual store of energy; further, during all the years I worked in India, sleep came to me irregularly, especially in times of stress and anxiety. Physically and temperamentally, India, for me, proved very trying, and the hills alone brought normality. The response moreover was immediate, and how well I remember the first night's sleep which followed. I awoke, after ten hours' oblivion, but only to repeated calls by my new servant John, who came bearing tea and toast and little juicy bananas at seven o'clock.

We set to work at once, Mr. Hutton and I, elucidating a number of minor points and difficulties, and a month or two later had the Government on our side in the matter of the *ad hoc* Committee. A Cabinet Meeting was held with the Governor present, at which the several interests were defined and the names of representatives settled. The numbers so included were:

A PERSONAL NARRATIVE

The Governments of India, Madras, and Cochin	Six members, including the Collector of Malabar as Chairman.
The Chamber of Commerce	Three members.
Other local merchants, including two Indians .	Four members.
The South Indian Railway	
The United Planters Association	Four members.
The Municipalities	(One member each)
The Imperial Bank of India	

Of these seventeen members, the local Bank Manager and one merchant-shipping-agent were co-opted at the first meeting of the *ad hoc* Committee.

It will be seen that the three Governments could have been outvoted, but reckoning on the support of the South Indian Railway and the Imperial Bank, which were quasi-Governmental bodies, and the probable concurrence of the Planters' Association, giving a total of nine votes, there was a bare majority of one in favour if the Chairman gave his casting vote accordingly. This was not designedly so; it happened so, and at the time I do not think anyone thought on these lines. Nor, at the time, did I ever take note of the fact that there were thirteen separate interests involved, nor, when our work was done, that we had sat on thirteen separate occasions, but so it was. The terms of reference bore directly on the subject of jetties and warehouses and the terms on which the mercantile community would use them, on the setting up of a port trust, and on the raising of a loan for all purposes connected with the Cochin harbour. Indirectly, however, these terms involved discussions on the whole project: its scope, design, and its land communications.

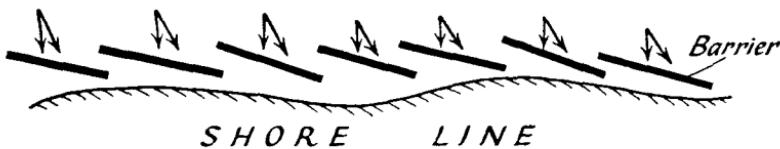
The order creating the *ad hoc* Committee was eventually dated 9th July 1920.

There had been some delay, as on 4th June I was informed by express telegram that the monsoon had burst heavily and had already breached the existing Vaipin shore defence in many places. I arrived at Cochin on the following morning, in a steady downpour of rain, and went straight to the site, where I found angry seas breaking over the old dyke or bund and the villagers in great trouble. Our own trial groynes were already being undermined. Watching the wave action carefully we soon discovered that the retreating wave set up a suctional force between the open joints of the laterite facing blocks, where these had not been kept

in good order, and was sucking the sand 'hearting' out through the openings, thereby causing the bund to collapse. We counted about thirteen such breaches, but by the time the storm was over there were thirteen more.

We set the villagers to work whenever there was a chance day or night to calk these open joints with coconut leaves straight from the trees, and then began to make good the breaches with heavy rubble stone as quickly as it could be delivered. Both Dickinson and I agreed after a few weeks' experience that a barrier was necessary, but not groynes, and he very sensibly suggested that if we raised and strengthened the heavy boulder 'toe' as it had been provided for the old bund, it would give all we needed to prevent the further erosion northward, thus dispensing with the bund altogether. To this I added the suggestion that we should not make the protection continuous, but broken and in echelon formation with ends overlapping, thus trapping any sand brought up by the ground swell which succeeds the monsoon

Direction of later swell



breakers, and so that during later periods of accretion the sand would be washed up between the openings and thereby effect automatically a reclamation of the eroded areas—which, by the way, were now being strewn liberally with uprooted coconut palms.

This is exactly what happened. By November the foreshore was to become completely restored, even above its previous levels, at a cost which put the more expensive methods quite out of court. And a smiling bevy of mothers with their children about them, all attired in the minimum Malabar fashion, came out to salaam when I made an inspection a few months later. In this area the men were mostly fishermen, but the products of the coconut palm were even more important, and the families lived happily enough in spite of, or perhaps because of, their primitive status.

This first experience of labour conditions in India revealed the fact that the whole economic structure of India depended on

one formula: minimum of machinery with maximum of unskilled labour—that is, wherever it could be used properly. It was this, I found, that kept the people happy, men and women together, and proved the least expensive to the State. And this, of course, was contrary to Western practice, where the machine dominates every field of industry. It is wrongly said that with this policy of minimum machinery the great masses of Indian people are paid a mere pittance and exist on the verge of starvation. Later on they came to us in boatloads from all parts of the backwaters and rowed themselves home before sundown, singing as they went, to be met by smiling mothers or grandmothers and children on arrival. Their food was basically rice (unpolished, of course) and their stamina and endurance remarkable.

At Vaipin, with machinery, cranes, boilers, fuel, light, railways, trucks, etc., we might have done the work in double the time and employed one-third the labour. The cost would have been more, and we should have kept two-thirds of the people out of a job which they could do well and willingly for sixpence or eightpence a day, enough to buy (in 1920) two good meals and so help out the fishing and coconut returns very agreeably. Moreover, besides paying them a trifle more than the ordinary rates (because of the special nature of the work) we took steps to ensure that all our labourers *retained* their pay. We soon found that there was an old custom by which Indian foremen exacted a trifle from each hand engaged, and we therefore introduced the Home Dockyard practice, in which the cashier's representative paid weekly wages in the presence of a gazetted officer. We also put up notices in English, Malayalam, Tamil, and Hindustani proclaiming that any worker bribing a foreman or any foreman exacting money from a worker would be instantly discharged and not again employed. This, I think, laid a better foundation than we had expected, for afterwards we got the best men on this ground alone, even though we paid the equal of other local rates on the general average. Later we were to discover that the old practice was being insinuated more subtly, and on proof of it carried out our warning to the letter. I do not remember that we had any recurrence.

A darker side to the picture was soon to appear. When it became obvious that the barrier, or parallel stone groynes were to be continued northward, a decent contractor who had secured

the contract for the supply of the material complained that a new 'toll' was being charged on the passage of boats through the canal which led from the quarry to the backwaters of the harbour, a toll equal to about twelve and a half or thirteen per cent of the contract rate per hundred cubic feet of stone. This, the poor man said, absorbed all his profit in advance, and he could not continue the supply unless his rate were increased likewise. I thought this a queer story, and said I would look into it myself. We had already taken the precaution of writing to the Chamber of Commerce and other employers of labour in order to ascertain current scales of pay for the different grades of men and women, and also obtained from the P.W.D. average prices for various works materials. It looked as if something, or somebody, had to be nipped in the bud.

Two days later, therefore, I made what I hoped would be a surprise visit early in the morning, but as our little launch sputtered slowly along the narrow and shallow canal the news of its arrival was rapidly carried forward on land, so that by the time we had reached the toll-bar (a log of timber floated across the channel) a vast crowd had collected. I jumped out quickly and ran up the bank. The toll-cabin was empty. Addressing a man who had said 'Good morning, master,' and who turned out to be the house-boy of a European, I said:

'And where is the toll-keeper?'

'He knowing Master coming in launch. Therefore he running away!'

(By this time I had learned something of this way of speaking and replied in the same strain:)

'If doing good work why running?'

'Master, please, I not knowing.'

'Who putting that big log across canal?'

'That man also running away. *Plenty* running, Master: running too fast!'

'All right. Tell all people this. Master belonging to Madras Government. Master saying all boats going through now, quickly, *too* quick. Master also saying taking log away, and not paying any more tolls. Master also seeing Diwan Sahib and telling him everything. Finish.'

The canal was in Cochin State territory and I was taking a risk, of course, in giving such peremptory orders, but I guessed that

the men, if employed under State authority, would not have run away from their jobs, and that there was dirty work afoot somewhere. And so it proved. The Diwan could throw no light on the case, but approved the removal of the log and asked one of his staff 'to explain the circumstances in which an unauthorized toll-gate had been established at the Hill Palace Bridge', then under reconstruction. In three months, having received no reply, the officer was reminded that the reference was still unanswered, and then replied that 'he had fined the bridge contractor twenty-five rupees and filed the papers'.

'And do you accept that, Diwan Sahib?' I said.

The Diwan looked at me with a peculiar expression.

'He would not dare to reply like that unless there were—er—others in it.'

'And must you put up with it?'

The Diwan's expression darkened and hardened.

'There are some things, Mr. Bristow, that even a Diwan is wise to put up with, provided no great harm has been done.'

'Well, if they put any more tolls on my harbour materials I suppose I shall have to inform the Madras Government, who will then raise the matter officially through the Resident?'

'Nothing I should like better,' said the Diwan; but there was never any need. The next attempt to cheat the harbour over the stone supply came in a more daring way, a way almost incredible to the British mind, as will be seen.

So much for that first monsoon and its consequences.

The opening meeting of the *ad hoc* Committee was held on 16th July, and the thirteenth and last on 10th September. Most of the work fell to a Sub-Committee of eight persons of whom the Diwan was elected Chairman and myself Secretary. I had already hoped for this decision (and it came quite spontaneously), for I knew how well we could pull together and get the boat moving smoothly. Besides ourselves there were the Port Officer (R.N.R. retired), three members of the Chamber of Commerce, one Indian merchant, and the local Imperial Bank Manager. A second sub-committee of two was appointed to consider the setting up of a Port Trust, and both sub-committees agreed to make their reports by 9th September—less than two months later. My committee, of course, had to deal with the project as a whole.

It had always been my experience that when a number of people got together and put their cards on the table a problem could generally be solved like an easy algebraic equation—simply because all the factors became known. Even if one or two members tried to keep something back, the sharpening of wits round the table soon exposed hidden factors, and the collective influence of others softened perverse objectors. If a man had a really bad case to argue he would either hide it altogether or spend his time in purely destructive criticism, or personal attacks on individuals, or both. But at heart he too was susceptible to the mild influence of 'Mr. Speaker' and the advice of an experienced secretary—if tackled in private with understanding and sympathy.

The Madras Government had already taken care, in selecting the main Committee, to appoint men known to be reasonable, and our sub-committee made rapid progress. Behind the scenes and immediately a meeting was over, Dickinson and I set to work and prepared rough estimates and plans for various proposals arising from the discussions, while, at other times, he also reduced trade figures, from the year 1907 onwards, into such units of tonnage as would give a true basis for the estimation of port receipts from all quarters, imports and exports. 'How much can the port afford?' had soon become a very urgent question in our debates. Dickinson quickly proved himself invaluable both in the office and on the works. He had a voice and a chin, and two admirable gifts—a head for close study and a disposition towards open-minded co-operation with those above and below him. He was a great help. ('Does he show temper, tact, and judgement in dealing with those above and below him?' had been the first question asked about a probationer in my old Department.)

It soon became apparent that some merchants were apprehensive that a modern port would attract competitors from other sources and add to their difficulties by cutting prices, or by stealing their markets. Soon, too, I discovered that the Port of Madras and the merchants of Madras were by no means happy about the proposed development, especially as at that time there were already signs of difficulties in the maintenance of Madras harbour. More than ever I was convinced that if anything at all were to be done for Cochin we must secure unity locally—and at once—and I had not then visualized far greater troubles that were to come later. Broadly, if faintly as yet, I could see, however, that

the whole economy of India had grown out of the fact that there was no major port between Bombay on the west coast and Madras on the east, for Goa, of course, was Portuguese, and Colombo in Ceylon. Railways, shipping, trade routes, trade agreements, and all the complicated background of trade adjustments had *fashioned a pattern*, and Cochin would put it out of shape.

However, I discovered, too, that Cochin had powerful allies in four quarters: the Cochin State itself, the British Navy, the Planters, and first and last, Lord Willingdon. Fortunately I knew the Admiral who had just been appointed Director of the Indian Marine, and whom I had known as Third Sea Lord at the Admiralty.¹ He was certain there would be another war and that Cochin would be drawn into it. Both he and every other Admiral who succeeded him said that the Cochin approach 'on the line of the nine degree channel (9° north latitude) would be invaluable in war'.

This gave me great moral reinforcement during subsequent troubles, and the Madras Government took the same view. Writing to the Government of India, they expressed the view that 'the hinterland of Cochin is fertile to a degree and has no proper outlet. Nor is the opening up of the immediate hinterland to trade the only purpose which a harbour at Cochin would serve. The possibilities of the trade development that might follow from the institution of a really good harbour are immense. Such a harbour might carry trade from parts of the Presidency and Mysore. It might receive mails direct from Europe for the south of India. It might relieve Colombo as a port of call, and it would also be most useful as a *coaling, watering, and repairing base and a naval harbour*'.

This, then, formed the background to the work of the Committee as I saw it. From the mercantile point of view we proposed to alter a very old pattern, whereas administratively we were to create a major port with all its attendant advantages nationally and internationally. Somehow we had to harmonize our feelings and focus opinions to a common end.

And we succeeded. It soon transpired that for such an expansion as would follow the creation of a major port we should need more land, and land, if acquired, would be expensive. Could we

¹ Admiral Tothill.

not reclaim an area within the backwaters and cut out previous ideas? What I was after was a four- or five-mile frontage line against deep water, enough to accommodate naval as well as mercantile vessels, and the best site for this would probably be an island. And an island was already there—in the middle of the harbour—which could easily be enlarged to double its size or even more. The new part would measure at least six hundred and forty acres,¹ all of which could be pumped up from the deepening and widening of channels alongside. The existing island was called Venduruthy and it had been used as a leper settlement. When required it, too, could be raised by more dredgings. Two bridges, each about two thousand feet long would connect it to the mainland on one side and the 'British' Cochin business areas on the other.

At this stage Dickinson and I had discovered just what trade the merchants were handling during normal years before the 1914-18 war. We realized that we should have to meet them over both the questions of lighterage and existing facilities. After much thought it occurred to us that the firms should be allowed to keep their existing backwater traffic, but should use the reclamation for docks, slipways, workshops, coal and water supply, and new warehouses for *inland traffic by rail or road*; for passenger traffic, too, and also as an overflow from backwater (boat) traffic. This seemed fair all round and so, in fact, thought the Committee, who also agreed on these terms to the construction of both new warehouses and jetties. The estimate for the whole project, including the cost of dredging plant, new bridges, wharf, railway connexions, etc., was reckoned at 203½ lakhs of rupees. In English money, with the rupee at its present rate of exchange of one and sixpence, this would equal roughly one and a half million pounds sterling. At that time the rupee was falling in value, and it was impossible to translate the cost in terms of English money.

We finished our report on 9th September as had been requested. It was accepted by the main Committee and forwarded the next day, signed by all members, to the Madras Government. There had been a few awkward corners to turn, and I think our deliberations were then helped along by a large clay model which we had made to illustrate our points. Though Dickinson and I took it calmly enough at the time, the Committee had done a splendid

¹ Afterwards increased to nine hundred.

A PERSONAL NARRATIVE

job, building far better than they knew, having regard to the formidable opposition shortly to become manifest from other quarters.

The Diwan, Mr. W. T. Anderson, and I stood quietly talking over the result. Anderson was very cordial.

'Well, you managed that very well between you. I suppose the reclamation was the key?'

'Partly,' I said, 'but you all shared in the credit for an excellent compromise over the question of backwater traffic.'

'Ah! and now let me tell you something,' said the Diwan. 'Last night we had a public meeting at which the advantages and disadvantages of the two Ernakulam frontages for harbour purposes were hotly contested by rival interests. I was in the chair, and when they had all had their say I told them that it had been a very interesting discussion, but I could now reveal to them that neither site would be required as there would be a big reclamation in the middle of the harbour.' And the Diwan smiled broadly, his eyes half-closed.

'Yes,' said Anderson, 'I heard something vague about that, and I don't suppose we have heard the last of it, either.'

I thought of Mr. X., and ever afterwards 'kept my eye on him' to some purpose. So did the Resident. When, therefore, a telegram running into hundreds of words was received by His Excellency about land acquisition in Ernakulam it was quietly disposed of: 'His Excellency was pleased to take no action in the matter,' and the paper drifted to me for disposal. I remarked that 'as neither site would be required the matter had no significance'. I learned the following year that a syndicate had been, or was being formed, with Mr. X. as its prime mover, to buy up a large area, exactly as foreseen by the Resident. I do not know how many people bought land which proved of no use to them as a speculation, but I was to discover that I had made a most malicious enemy who, until the day of his death, sought revenge in personal slander and false statements, both at home and abroad and in every quarter, official and otherwise.

Members of Government and the knowledgeable public were astonished at the unanimity of the Committee's report and the expedition of its framing. 'I don't know how you did it,' was a remark constantly repeated to me by responsible people, while

certain new Ministers and Secretaries who were now coming into the picture were plainly critical of some of our estimates and general inferences. 'Ridiculous: it can't be done for the money,' was one remark, and on another occasion, 'Mr. Bristow's calculations are not calculated to convince.' I was astonished at such remarks coming from those who knew nothing of dredging and harbour works, and at the obvious hostility now shown to the report.

Mr. Hutton was troubled. 'I told them,' he said, 'that the estimate was near enough for administrative purposes, but if so desired they could increase it to two hundred and fifty lakhs. What do you think?' I replied in effect, and more suavely perhaps, that Dickinson and I had checked and cross-checked the estimate more than once, and that anything else would be guesswork; I was in possession of the facts and saw no reason to adapt them to suit amateur speculations. In fact I began to doubt whether the criticisms (there were others of the same kind) were entirely free from bias.

About this time, and after a luncheon party, Lord Willingdon sent an aide for me when we had gathered in the drawing-room.

'His Excellency would like a word with you,' he said.

I found 'His Ex.' in an attitude of complete relaxation leaning back in a corner of the settee.

'Sit down, my dear fellow. . . . That was a business-like Committee of yours—are you *quite* satisfied with the results, or would you have liked more?'

'Quite satisfied, sir.'

'And how does it stand now?'

'Government are examining the report and estimates.'

'Oh! . . . Who in particular?'

'The P.W.D., Finance, and Marine, sir.'

His Excellency looked thoughtful for a few moments and then remarked, as if raising a new topic:

'I suppose you know that I have now handed over the portfolio to the Minister? That is part of the new reforms, you know?'

I hesitated. 'I am afraid I have not yet grasped their significance, sir, and am still very raw in official matters here. But I have heard that the reforms are not wholly popular.'

'Perhaps not,' said His Excellency, 'but we have to fit ourselves

A PERSONAL NARRATIVE

into them, and my particular job is to carry them out. I have no ministerial power at all, but I have been given a general hint as to policy which is merely "Go to Madras and wake it up"; Cochin is part of this policy, and I feel sure you will agree.'

'Wholly, Your Excellency.'

'Well; I will help you when I can, but you must deal first-hand with the others now. And don't forget this is India and not the Admiralty!'

'If I may venture a remark, sir, I think we shall find the Admiralty very useful to us, and in fact I am keeping in touch with them. I wrote to Sir Oswyn Murray only a few days ago.'

'Did you?' said His Excellency. 'A private letter, I suppose, but . . . about anything special? Are we to have a copy?'

I did not keep a copy, sir; it was merely to tell him of the success of our *ad hoc* Committee, and how I felt it was largely due to my experiences with himself and others on the Whitley Councils.'

'Very proper,' said His Excellency, rising and laughing, 'quite diplomatic too. Yes; *we must not forget the Admiralty*. . . . Good day and good luck, and let me know if you get into any serious difficulty.'

The serious difficulty came soon enough. I told Mr. Hutton of my talk with the Governor and we dropped into a conversation as to our relations *vis-à-vis* Finance-Marine. It appeared that the new Finance Minister, although, of course, a very senior member of the I.C.S., had never served on the west coast of India, but always on the east, and had a special interest in a roadstead called Tuticorin, where he had been what was designated 'Collector of Salt' and had encouraged the salt industry. Tuticorin was a bustling little port where ocean-going vessels lay four miles or so out to sea, and the merchandise had perforce to be transported by lighters. The Consulting Engineers¹ had examined its possibilities in 1918 and, apart from Cochin, considered it to be the most suitable for development of the remaining minor ports (or roadsteads) in the Madras Presidency. I knew that I should have to survey Tuticorin more thoroughly and make a firm estimate for whatever could be done; and, so far as I was concerned, this duty would be undertaken as a matter of course and without the least bias, just as if the Admiralty were examining the possibility of

¹ Messrs. Sir John Wolfe Barry and Partners.

making a new harbour at Dover, for example, between Portsmouth and Chatham.

On the other hand, Mr. Hutton feared there might be jealousies between Cochin and Tuticorin, and that while the Governor might stand for the one his responsible Minister would fight for the other, especially as Tuticorin was wholly in 'British' India, while Cochin was largely in an Indian State, and so presented new and difficult problems, administrative and judicial. I had seen the charts and plans of both places, of course, and studied the files. On paper, at least, no naval officer or harbour engineer would hesitate five minutes in choosing Cochin as being vastly superior in its natural features and harbour possibilities, but Mr. Hutton was doubtful if the matter would be decided on this issue alone.

'You will find there is more to it than that,' he said. 'I am afraid we are in for trouble.'

We were; and I could see of course that my own position would be intolerable if the Minister became suspicious of my own impartiality; but I could not believe—then—that matters would come to such a pass: that my own professional integrity as a well-trained Government harbour engineer could be doubted. Like anyone else I might make a wrong judgement from imperfect data, but wilfully to distort facts or suppress essential information seemed utterly fantastic to me. Alas for my innocence! I was to learn that, as Lord Willingdon had said, 'India is not the Admiralty', and also that my old Department in the Admiralty was the cleanest and straightest I was ever to know.

CHAPTER ELEVEN

UNDER WAY

At this stage many events and personalities crowd upon each other with eager request to be 'mentioned in dispatches'. Socially I recall my first season at Ootacamund, my appearance as the Dragon King in *Where the Rainbow Ends*, Sir Arthur Knapp, I.C.S., 'doing up my face' and asking how he could transform anything 'so beastly benevolent' into that of a Dragon King; the Gaekwar of Baroda sending me up a large wreath after St. George had parried my final thrust and laid me low for the last time, while all the schoolboys in the gallery yelled and whistled their delight at my last convulsions. I remember our experiments in spiritism at the hotel, the reality of some form of magnetism which flowed through a ring of hands, the mystery of a darkened room, and the occasional spurt of a dying wood fire; the thrill of a woman's voice gravely asking 'Is there a Spirit here?' and a trembling of the nerves, but nothing more—save on one occasion when a large stuffed alligator from the hall outside suddenly dropped on the centre of the table accompanied by the weird cry of a heretic from the outer darkness. And much more of the same sort, following upon the dancing years which succeeded the first war, and the strain of life was lifted.

It was a full life; we worked hard and played hard. Lady Willingdon would herself, and not infrequently, work all day, dance through the night, and hunt in the early morning, and Heaven help you if you fell short of her good intentions. I was always up by six thirty and generally put in two hours' work before breakfast at nine. After that came an hour's dictation to my secretary, then an hour's rehearsing at the Assembly Hall, then a couple of hours at the office. Lunch and a short nap. Golf or work or a long walk. Tea. Another hour or two with my secretary; recreation, dinner, interviews; bed by ten thirty if possible. Sometimes a long day of fourteen hours' work when affairs grew troublesome; sometimes a restful day on the high hills with a friend, a pipe, and a sketching block—happiest of all days,

perhaps. But more trouble was brewing; never again, after that first season of India at its best, did I recapture its busy *joie de vivre*.

Lord Willingdon was disturbed. He could not understand why there should be delay in accepting the *ad hoc* Committee's report, and meanwhile, with the quick spreading of its contents to other parts of India, various interests were moving against its adoption. His Excellency had had hints from Bombay and Madras that there were many dissentient voices; he knew of course that one of his own Ministers was inclined to push Tuticorin rather than Cochin, that others were raising the bogey of split or double jurisdiction in the Cochin area, and others still the accuracy of my estimates of cost. He decided to visit both places personally and test the feeling at each.

At Cochin both he and Lady Willingdon (and staff) inspected the Vaipin erosion, saw the rapid success of our new parallel groynes, and spoke congratulatory and heartening words to a full gathering of the people. At Tuticorin he made his first acquaintance with the conditions and discussed pros and cons of finance. Lady Willingdon took the measure of the women at the European Club and delighted her listeners by telling them how her parents had thought she was too young to marry 'His Ex.' at the age of sixteen, and had packed her off to school in France with instructions not to write herself or receive letters from her ardent suitor; how 'His Ex.' had 'squared' her duenna with a suitable present and they had written every day; how at last she escaped, came home, and said she was going to marry 'Free'¹ and did so.

My memories of Tuticorin are not clear-cut as they are of Cochin. I know that my first and last impressions were the reverse of favourable, from the points of view of climate and municipal conditions. They seemed to be a hurried, dusty, and vital people, and I marvelled at their energy and fortitude. Rudyard Kipling had said after a brief visit to Tuticorin that the European merchants there seemed to 'live on telegrams and whisky', but that was only after sundown. In all my service in India I can remember only one European who drank whisky during the day. Some drank gin and others beer, but not immoderately. Tonic water, cold soda, ginger ale, and lime-juice were all popular in the south, and I can remember, during one horrible day of heat and labour,

¹ Mr. Freeman Thomas, as 'His Ex.' was then.

drinking thirteen pint bottles of these 'soft' drinks before sun-down.

I had been led to suppose that I should find all the people of Tuticorin eagerly in favour of a new deep-water port. I did not. I found one big interest in favour and another against. I found some waiting for a lead and others suspicious of the whole idea. I found the climate harsh and dry and the air acrid with coral dust. There was also a blinding whitish sun. Rainfall was low and concentrated, evaporation high, which explained the development of the salt-pan area. There was a thriving cotton-mill under European management and a healthy export trade, of which Colombo (one hundred and fifty miles south-east) took a regular proportion. The Madura Company, under European management, handled much of the shore-to-ship traffic in lighters more strongly built than those at Cochin, Tuticorin having no friendly off-shore mud-bank over which ships could anchor in rough weather.

A coral reef named Hare Island formed a natural breakwater some three miles distant, and had the water so protected been deep instead of very shallow the status of Tuticorin as a port would have been assured. As it was, a light-draught tug and lighters were all that could pass across, and ships lay from four to five miles off the mainland. I saw no difficulty in dredging the soft coral, but I believed there was a harder variety somewhere underneath, and the prospect of having to dredge a large mooring area behind Hare Island and a navigable approach around or through Hare Island did not appeal to me.

At Fountain Lake, in Portsmouth harbour, the *St. Alban*, a rock-breaking bucket dredger, had come to grief trying to dredge a particularly tenacious conglomerate which, in isolated masses, underlay the clay. I had inspected some of these (in diving dress) as we exposed them. They were found too big to raise, and it would have been too costly to blast them into fragments. The bucket dredger, in trying to raise one of them, had broken the back of its dredging ladder, and the project was abandoned. This was in 1910-11. Whether other dredgers were more successful later I do not know.

With this in mind I engaged an experienced burgher foreman from Ceylon to supervise the sinking of a number of borings down to a level of thirty feet below low water. I stressed the importance of his checking every foot personally and taking

samples whenever the subsoil varied. To my great relief and surprise, the only materials encountered were said to be silt and sand or soft coral in some form or other, and these were all that showed in the samples taken. This result encouraged me to consider the proposal more favourably as a practical engineering possibility, and I began to explore every means of reducing the dredging to an absolute minimum. At last I conceived the idea of dredging the 'harbour' like a wet basin within Hare Island itself, approaching it by a kind of short Suez Canal from the sea, and connecting Hare Island by rail to Tuticorin over a neck of land which conveniently ran from the south end of the island to the mainland. As an engineering project simply, this was the cheapest solution, and I began to prepare estimates in accordance with my instructions. When these were finished I forwarded the particulars of my proposal with an explicit statement of what the scheme included, and a warning that it would entail 'hard slogging' throughout its construction.

Meanwhile investigation by Government amid the 'triple zariba' of administrative stockades, produced a cautious programme for Cochin. The scheme would be approved tentatively and finances apportioned between the Governments concerned subject to our proving each step as the work proceeded. The first stage of protective works and preliminaries was given covering approval. Money was provided at once for certain experimental dredging works inside the harbour and across the outer bar, and, if these showed promising results, another stage would consist of major dredging works whereby ships would be brought inside and lie at moorings in stream. Finally, when this mooring had become the regular practice of ocean-going ships, all other facilities necessary to a proper modern harbour as submitted in the *ad hoc* Committee's report would be constructed. I was to submit estimates and plans for each successive stage.

It was now April 1921. I had been in India a year and began to doubt if I was justified in staying. First, the nature and scope of my duties had never been made clear to me. Now I could see well enough that not only was I to take final responsibility for the design and execution of all works, but to act as protagonist for Government in securing public approval to them. I saw, too, that Government had no united voice and that in terms of responsi-

bility it was hard to distinguish the advisory functions of local port committees and members of the Secretariat. One newly appointed Secretary told me, in severe correction, that he, in a proper sense, *was* the Government, but this came a little later. The newly appointed Finance Minister had informed me that *he* was my Chief and that I would have to go the way he wanted. Another Secretary suggested that it would be simpler if I were placed under a newly appointed Presidency Port Officer—a sailor with no knowledge of harbour engineering work. A fourth—my good friend Mr. Hutton, in fact—made it clear to me that he wished me to become a ‘specialist’ officer under himself and that he rather resented the part I had played in the recent tours of Lord Willingdon, at which his own presence had not been requested. This was certainly no fault of mine, but a seed of suspicion had been sown and it grew in him. The various ‘offices’ of the above principals, consisting of clerks and assistants, soon saw how the wind was blowing, and I began to receive daily pinpricks in the form of what seemed absurd requests as to the why and wherefore of every simple routine proposal or action I had made or taken.

Shortly after the Government Order was issued sanctioning the experimental work I received an invitation to dine at Government House. Few were present beyond Their Excellencies and staff, and after dinner Lord Willingdon took me aside and asked me if I was satisfied with the new Cochin Order. I realized immediately that the interview was premeditated and that now was the time to tell His Excellency what was troubling my mind. I therefore told him frankly that the Government machine seemed very cumbrous, that we were getting a minimum of progress with a maximum of effort, and that I sincerely doubted if I or any other man could execute successfully the works proposed under such a system of administration. His Excellency nodded his head thoughtfully as I explained the situation to him.

‘Would it be better,’ he said, ‘if we were to let these works out to a big firm of Contractors under your superintendence?’

‘I should like to say “yes”, sir; but I am sure that because tenders must allow for foreign contingencies and risks, double overhead charges and ample profits, no contractor would undertake such works for the sums mentioned in my estimates, or anything like them; and I am afraid that we should be in constant disputes over claims for “extras”. It is far better that I should

train a works staff from the beginning, both in capital and maintenance works. We should need a supervisory staff in any case and a fairly large one.'

'I see; but what do you think of the Order itself?'

'On the whole, sir, I wish it had been less tentative in its expression. I foresee many openings for misinterpretation by other parties—after you have gone, perhaps. At the same time, it can equally well be defended on the grounds of prudence, and I willingly accept it. My fear is that no man can carry it through under our present multiplication of secretaries. It is asking too much, especially as they seem constantly to be changing.'

His Excellency pondered awhile, looking at the billiard table where his aides were playing a match. Resuming his enquiries he remarked:

'You know of course that Cochin will not be built without opposition from many quarters. You have brought in Cochin; I must try to do the same with Travancore. Madras is not keen, and now I am hearing adverse news from Bombay. Quite possibly Colombo will resent a new port being built not far away, especially one with such possibilities as Cochin. I must get the whole countryside behind me if it comes to a fight with the Government of India; and that means, I suppose, a sort of omnibus agreement with Travancore. I will talk it over with the Minister. Don't you agree?'

'I have been told, sir, that Travancore has two or three roadsteads of her own, and enjoys long-standing maritime rights. It would be a great step forward if such an agreement were possible. And, of course, large parts of the vast backwaters are in Travancore State. That is very important to me, for technically the waters are one—a whole unit.'

'A very good point. Yes; I begin to see my way. As for your own troubles, don't worry. I think we can get over those for you. . . .'

Shortly after these events I received a personal note from His Excellency confirming the Government Order as being the fixed intention of his Government and promising his support if it were necessary in later years. (Governors were appointed for five years only.) He was good enough to add that my enthusiasm and activity had been like a breath of fresh air to him, and the note was

evidently intended to revive my somewhat clouded faith in India as an attractive working alternative to the Admiralty. Not only so. A month or two later, at Ootacamund, I was called to the Secretariat and informed by yet another Secretary¹ that in future there would be created a new Marine Department within the Finance Department, operating directly under the Finance Minister. It would consist of two branches, the Presidency Port Officer's and my own, working in parallel, but with separate functions. I was asked informally to draft an Order putting this into effect and showing its content and significance so far as a Department of the 'Harbour Engineer to Government' would be concerned. This draft was duly considered and shortly afterwards approved in its general substance.

I was greatly relieved by this adjustment of my position, especially when I discovered that both Lord Willingdon and several of the Secretariat officials had already realized that 'Bristow must be separated from the P.W.D.' Mr. Hutton, apparently, had also, if somewhat doubtfully and regretfully, come to the same conclusion. He knew more than I of the departmental difficulties ahead, and was honestly doubtful if the arrangement would last. On personal grounds I shared his regret. He had been a staunch supporter of Cochin before I was appointed. He had the practical commonsense and strong character which I had come to respect so highly in others during my six years' service at Rosyth, and his engineering judgment was sound. If he could not suffer fools in silence, or if he showed his contempt for political adventurers too plainly, such defects were but the harder fruits of his integrity and candour. He retired in 1924 and died a few years after. As with so many others, retirement did not match his dynamic personality.

There was one matter we both overlooked during the process of handing over from the P.W.D. to Finance (Marine). Before leaving Whitehall I ascertained that my 'personal' docket would be forwarded confidentially to India through the India Office. This filtered through in due course to the P.W.D. Secretariat in Madras, and Mr. Hutton confessed himself astonished at the breadth of training which Admiralty service demanded and the varied experiences which it brought. The docket also contained the usual confidential reports as to ability and character which my senior officers had dispatched to headquarters over the whole

¹ Mr. P. L. Moore, I.C.S.

period of my service. This important docket had then been filed in the P.W.D. and forgotten.

It was, however, the first thing necessary to any Minister dealing with a new staff officer. I came to Finance, as it seemed, with no personal introduction or detailed record of past services. It was a serious oversight. During the past year I had had a sharp passage of arms with secretariat officers over technical matters of which I alone had any knowledge. Such incidents would never have occurred in the Home service, and I showed my resentment. I had not then fully realized the difference between the 'higher divisions' of England and India—their codes and traditions. All the more reason, therefore, for passing on my papers and letting them bear witness of my past services rather than my own words. It was years later when, in a similar case, a secretary told me that 'departmentally' they knew nothing about me! The defect was soon remedied, for on leaving the Admiralty I had been given, as a special case, a copy of my own confidential docket; but the harm had been done.

I can only plead that my duties were pressing hardly on my time and my mind was full of other things. Only those who know the difficulties through personal experience can appreciate what it means to start an important department in India from zero, without staff or equipment, with new codes to learn and with India itself in the melting-pot. Besides all this, money was scarce and I had to deal with three separate problems: first, the experimental work at Cochin; second, the rival project at Tuticorin, and third, the surveys of minor ports all clamouring for guidance and improvement. And there was soon to be a fourth, a totally unexpected visitation and complication which transcended and affected all others and bade fair to terminate my own career in India. This needs a chapter to itself, but meanwhile I must record what happened in 1921 when I paid my first visit to Calicut, a port about sixty miles north of Cochin by sea.

The town of Calicut lies on a fairly straight coastline near the mouth of the Beypur River. Ships anchor in the roadstead, and goods are transported by lighters which load or unload at jetties projected from the shore-line into such depths as will permit these craft to lie alongside their heads. Calicut also has a moving mud-bank whose vagaries inshore and offshore can become very in-

A PERSONAL NARRATIVE

convenient, sometimes invading the coast itself or blocking up the landing-berths of the jetties. This in fact was the immediate reason for my visit, and led to a closer study of the geology of Malabar and much of South India besides.

I stayed at the Malabar Club, a delightful place near the sea where tradition had merged into a culture and produced a custom and a charm which reflected the very spirit of the peaceful *Mofussil*¹ when left to its own ways and wishes. On the second evening after my arrival the Collector of Malabar,² whose headquarters were at Calicut, sauntered up and took me quietly aside.

'How long to you propose to stay here?' he asked.

'I am not sure; perhaps two days longer,' I replied.

'H'm. Trouble is brewing; I'm afraid it's serious. Must you stay? Is it very urgent, this visit?'

'I should like to remain for a day longer, at least, and save myself the trouble of coming again, that is, unless . . .'

I paused and raised my eyes to his.

'If you stay a day longer you may not get away at all. I think you had better get the first train back to-morrow morning—the six o'clock, sharp.'

'Why! What's up? I've heard of no trouble.'

'The Mops are out for blood, and they are damned hard to stop when they get going. Sorry. Can't stay longer. . . . Must get away. Lot to do.' And the Collector lounged off casually as if time meant nothing at all. It was about ten p.m. when I walked quietly up to my room. I found my servant, John, packing baggage and asked him why.

'What time please Master leaving Calicut?' he said, looking up from a strap.

'First train to-morrow morning. Six sharp. Why asking?'

'Plenty talk in bazaar, Master. I thinking Master please sleeping in shirt and shorts. Also putting shoes on.'

I had a rub down with a bath-towel and redressed while John packed my 'dress' clothes—white drill trousers, soft white shirt, black cummerbund, and alpaca dinner coat. It was a hot night, and stuffy under the mosquito curtain, but I slept for a few hours after midnight and got up in the dark at five, when John came in with

¹ Districts.

² Mr. E. F. Thomas, C.I.E., the Chairman of the *ad hoc* Committee at Cochin in 1920.

tea and bananas. The servants and coolies went off with the luggage and I walked quietly to the station, boarding the train in the half light at ten minutes to six. I had an empty carriage. John and my camp peons were in the adjoining servants' compartment, and their apprehensive muttering filtered through the wooden partition as I dropped into an uneasy doze.

That same day the storm broke. The Moplah Rebellion of 1921 began with a savage and murderous outburst of passion such as I had never known. This is not the place, and I am not the person to give an account of it. Moslems were then in a state of unrest in Arabia, and any spark of discontent blown upon by agitators with a grievance, real or manufactured, was liable to burst into flame under the Green Flag in the name of Allah. Personally I never had the least trouble with Moslems, except on one occasion when prompt handling led to an equally quick reconciliation about which I will write presently. The Moplah Rebellion spread from Calicut to the forests and elsewhere.

We had a flare-up later in Trichur, forty miles north of Cochin, where the Hindus and Moslems created riots between temple and mosque—a very potent danger—in the middle of which the British Resident ¹ appeared unattended and unarmed and strolled out of the railway station to make what peace he could. I happened to be travelling with him, and shall always remember his methodical unconcern and the manner in which he ate his chicken and bread, and drank a little soda-water, chatting genially about nothing in particular as we approached Trichur.

I was, in fact, returning to Calicut to finish my work, the rebellion there being nominally over. The Collector met me and took me to his bungalow. He said that he would not like to guarantee safety yet. The least thing might bring a short re-crudescence of trouble, and I had noticed the scowling faces that turned towards him as we drove through the crowded streets. At one danger point he slipped a revolver across the seat, observing that if any man ran out on my side of the car and raised his hand I had better defend myself quickly. However, nothing untoward happened, and I finished what I had to do the next day.

My own bout with Moslems had happened a little while before. We were about to start the experimental dredging work at Cochin. A small bucket dredger, the *Manaar*, had been loaned to

¹ Mr. H. H. Burkitt, I.C.S.

A PERSONAL NARRATIVE

us from the Presidency Port Officer's department, but I was not pleased with its record of work done nor the state in which I found it. Both suggested indiscipline and carelessness. I had the vessel sent to Colombo and engaged a ship-repairing firm there to carry out a thorough overhaul. After it had arrived at Cochin I issued definite instructions in writing to the Master concerning the hours of working and division of responsibility. A verbal reply came back, not specifically addressed to me, but saying in general terms that the crew were not agreeable to the new conditions and would not carry them out.

I went straight to the ship with Dickinson and called up the whole crew. One of the staff interpreted. I explained that the *Manaar* was now under my care and that if they all did their work properly I would look after them. I should be on board first thing the next morning accompanied by the police and Customs officials and if they refused to carry out orders they would be discharged and denied further employment in my department. I pointed out that I had had many dredgers to look after in England and would not ask them to do anything that was not right and proper. Next morning I went on board with a nucleus crew of local watchmen and firemen. Finding the men idling and nothing done, I discharged them all. The police and Customs officer bundled them off to the Customs wharf and searched their baggage for contraband. The ship lay quietly in stream; its late crew dispersed on shore and began to think it over.

Next day a few came to the office and begged to be reinstated. They were followed by others, and finally by the rest, save one. He was a sullen-looking man with flashing eyes who wore a green scarf, a man I had marked down from the first as needing watching. They told me he had threatened them with a dagger if they obeyed my instructions, and he looked that sort of fanatic. For the rest, I never had and never want a more loyal, capable, and hard-working crew than those repentant Moslems. They were grand workers, and soon after we had established confidence on both sides I persuaded Government to give them a bonus on increased output, which so spurred their wits and their good intentions as to yield treble progress for the job and double pay for themselves, a division of spoils which gave permanent satisfaction to everybody. I also reinforced them with another Moslem dredging master from Bombay, a man of greater experience, who

turned out to be exactly what they needed and one whom they could respect for his firmness and knowledge, being himself a certified navigating officer for home waters as well as a first-class dredging man.

He was the first to receive an honour for distinguished service at Cochin. I had recommended him as deserving the coveted title of Khan Sahib, which, with his four wives, made him a very distinguished person indeed—Khan Sahib Biccu Balu, no less. His opposite number, Bappoo Khan, proved a worthy partner and succeeded him in due course. Two very fine men.

Of course, I know now that I behaved in a very overbearing and 'tin-god' fashion in breaking up this early indiscipline. I ought to have reported my plight to the Secretariat; I should have asked for a 'working party' of officials to come to Cochin, especially of those knowing nothing of dredging conditions; I should have suggested the appointment of a welfare officer, a shop steward, and an arbitrator; hinted at the creation of a public-relations officer. As the vessel was working both in British waters and Cochin State waters, I should have pointed out that all these posts must be duplicated in order to be legally effective, and that someone should hold a 'watching brief' in case Travancore were ultimately concerned in addition. Fortunately, this mad modern machinery had not then materialized, so we made friends and got on with the job with lasting respect and goodwill on both sides.

CHAPTER TWELVE

THE RAMESWARAM PROBLEM

I SAT on a grassy incline with my back against a sloping boulder. The morning was cool and golden, and a great stillness brooded about me. On a hill above Ootacamund, as I looked across a wide and shallow valley, a bridge of blue sky spanned my view to its far abutment of wooded heights. Behind, at intervals, a subdued chattering from the tree-tops betrayed the presence of black monkeys. Below, on my left, my chauffeur waited at the foot of the rough track which led upwards to the fringe of a copse known as Governor's Shola, a favoured retreat of mine when I wished to be quiet. And on this particular day I wished to be very quiet, for I had to deal with four unexpected and interwoven problems. The first of these concerned Cochin; the second, Tuticorin; the third, other minor ports in the Presidency; and the fourth, an entirely new project which in my opinion might affect the trade routes of the whole Presidency.

A well-known and experienced firm of British dredging contractors had sent a new representative to India with a view to testing the dredging market. This gentleman was familiar with Indian ports and had influential friends in India, but was neither a civil engineer nor a dredging expert. Hearing of the proposals for Cochin from various sources he at once approached Government (through the Governor with whom he was well acquainted) with the proposal that his firm should take over any dredging projects in Madras. This, of course, revived a suggestion which His Excellency had raised before and which I had negatived as being somewhat impracticable and in any case too expensive. As it happened, this same firm had recently done work for the Admiralty, and I knew at what rate per cubic yard, a rate at least double that of my estimate for Cochin, and for work in much easier soil. It was a perfectly good contract under Admiralty rules; the lowest tender had been accepted, and the work well and quickly done. Nor was there anything improper in any of the proceedings in India, which were all open and legitimate.

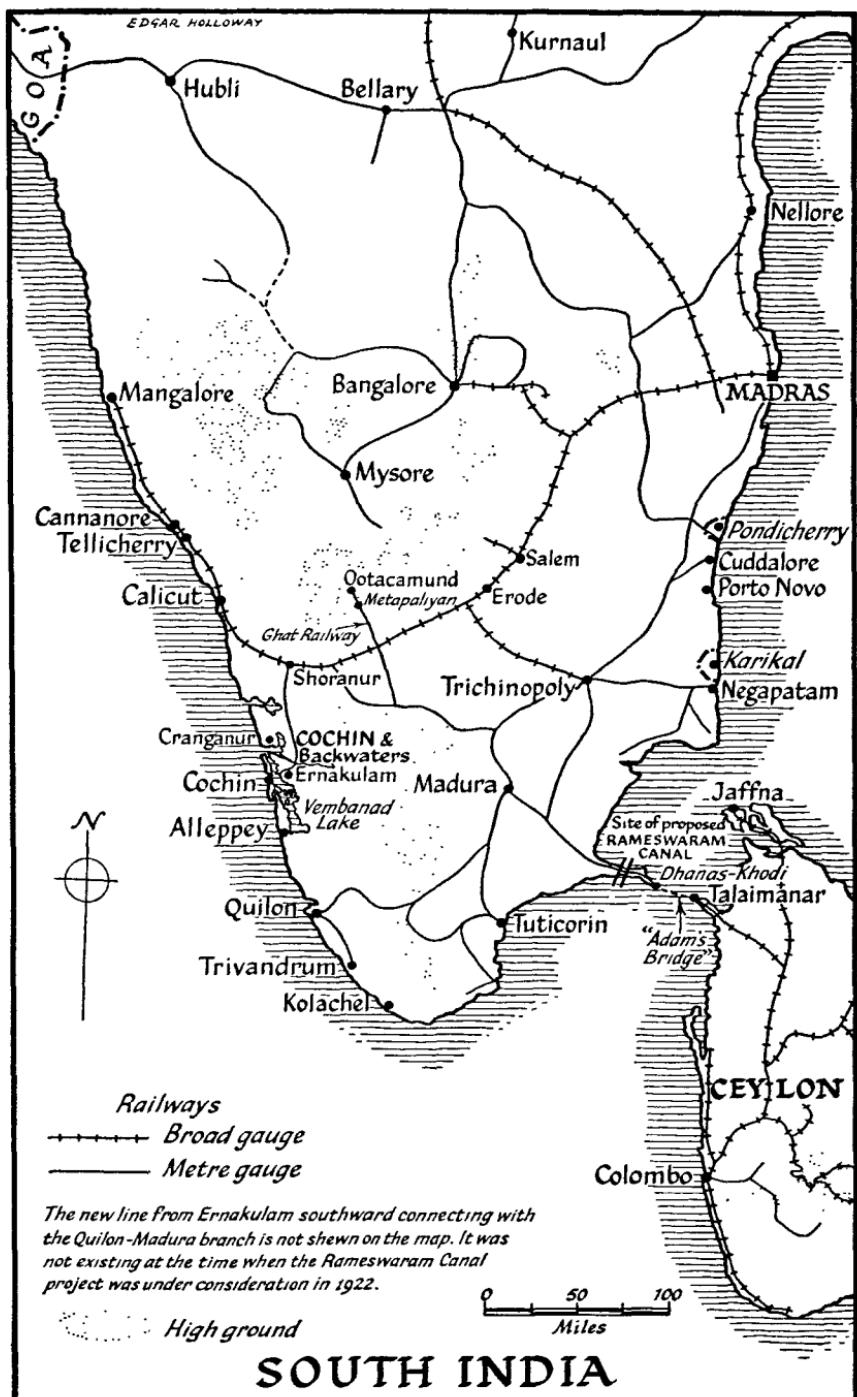
There had been a Cabinet meeting which I had been asked to attend and at which I had listened to this agent while he made his proposals. When asked for my remarks, I said it would help me to reply if I could be informed whether the representative had any standing with Government as another official adviser, or was speaking for a contractor seeking employment in India? There was, it seemed, a somewhat uneasy silence until someone said quietly but distinctly, 'Government has no other official adviser.' 'In that case,' I replied, 'I would like to remind Government that normally, under Government rules, tenders for all works should be invited from several qualified firms, and not from one only. The present discussions,' I suggested, 'should proceed in that light and on that understanding.'

There was another silence.

I then explained in some detail what special difficulties attended the preparation of a specification and conditions of contract for dredging work such as that at Cochin, and how the contract rates were bound to be much higher than those likely to be incurred departmentally. This factual statement made some impression, and the contractor's representative, somewhat unwisely, sought to discount it by impromptu generalities remote from the difficulties I had raised. Although no decision was reached then, I think that the Cabinet as a whole had obtained a clearer view of the administrative and practical situation, and probably drawn their own conclusions.

The second problem arose out of the Tuticorin discussions. It had been put to me that the case for the new harbour might be made stronger by the dredging of a deep-water canal only five miles long through Rameswaram Island north of Tuticorin, a projection from the Indian mainland and connected to it by a railway bridge. This island, extended by a shallow reef of rocks twenty miles long known as Adams Bridge, connected India to the north-west corner of Ceylon. The canal, if constructed, would place Tuticorin on a main ocean route northward to Madras and Calcutta as well as Rangoon. Ships would thereby avoid a tedious and stormy journey in the south-west and north-east monsoons, round the south of Ceylon. Both cargo and passenger boats drawing up to twenty-six feet of water would benefit considerably if the canal dues were not rated too high.

With Government approval, therefore, I had began a survey



of part of the island and appointed a young Indian officer and a good Indian foreman to make borings, take soundings, and ascertain tide levels. They were also to check all previous land and coastal plans and charts, having special regard to the habits of erosion and accretion, of new and old sand dunes, of winds and rainfall. Some years before, the South Indian Railway had surveyed the same area and made an estimate of cost for a canal as a part of railway policy. This estimate was reasonable enough on the basis of costs then obtaining and on such particulars as had then been gathered.

It was not surprising that these present and past surveys and projects had become known to the contractor's agent, or that the South Indian Railway now became even more interested in Rameswaram than in Cochin. Briefly, I too had to look farther afield. Before leaving the Admiralty I had been asked to report on new and old projects for the construction of a 'Forth-to-Clyde' canal, looked at especially from the point of view of the Navy, and I had been astonished to discover, apart from the difficulties of construction and navigation, how numerous were the interests affected.

With this knowledge behind me I suddenly realized, as I sat with a railway map over my knees, how the whole of South India might be affected. Suppose that on this canal grew a port served by the existing railway? The combination of the Suez Canal and Port Said would surely be repeated? Sooner or later the tendency of traffic under the spur of the South Indian Railway would be mainly towards Rameswaram? Ships might lie safely in a 'wet basin', a widening of the canal, and in calm water. A railway terminus and goods station would follow, and who could say with what results to Cochin, or to Tuticorin, or to the smaller roadsteads of the coast?

Thus my four problems suddenly became one, a problem which transcended them all. This set my mind working in so many directions that I lit my pipe and began to stroll up and down while the pot simmered, so to speak. After a while, as at Cochin, the mist cleared, and I saw plainly that my first step must be to complete the survey and estimate. In the interests of Tuticorin I thought that the canal, if found practicable, should be part of the Tuticorin scheme and financed accordingly. There was no call yet for a canal except as an adjunct to Tuticorin. Meanwhile I would



The Administration Block, Cochin Port



Willingdon Island and
Cochin harbour in 1945,
photographed from a
model

weigh the pros and cons of a new canal port from all points of view in times of peace or of war, in preparation for the time when I might be asked to give an opinion, and after other port interests (especially at Tuticorin) might become articulate and influential.

Coming back to earth, so to speak, I suddenly realized that the sun seemed much hotter and that I was casting very little shadow. Looking at my watch I found that I had been musing for three and a half hours, which had passed as one, and I was lunching out in half an hour. As I gathered up my papers the chauffeur came running towards me. 'Sahib please coming; having tiffin out.' I had not told him, but he knew. He always knew. The bazaar C.I.D. of this mysterious India knew everything.

The twelve months following June 1921 had been full of incident and significance. Much of my work had to be done in the train, and I began to put on weight for want of exercise. With the help of an excellent secretary and two attendants I visited Cochin and Tuticorin several times, Rameswaram whenever possible, and all the minor ports of the Presidency. On the west coast these included Mangalore, Cannanore, Tellicherry, Calicut, Alleppey, Quilon, and Trivandrum. The last three of these were in Travancore State, and so outside my official province, but it was desirable on several grounds that I should know something of their physical characteristics, their hinterland and trade. On the east coast I examined the problems and possibilities of Vizagapatam, Cocanda, Masulipatam, Negapatam, Cuddalore, Porto Nuovo, and Pamban.

My staff increased rapidly. An Executive Engineer was appointed to deal with works on the west coast and another on the east coast, including Rameswaram. Assistant Engineers were allotted to them, and some promising young men fresh from the Madras Engineering College began their harbour training by making port surveys at Rameswaram, Negapatam, Cuddalore, Porto Nuovo, and elsewhere. We started a new trigonometrical survey of Cochin harbour and a methodical study of foreshore changes and wave action at Cochin. Certain geological maps of South India, dealing mostly with special areas, were assembled and compared, and the missing parts made good by practical observation and inference. In my personal office I obtained a

clerical manager and a few assistants and began to build up a drawing-office on Admiralty lines.

The experimental work at Cochin was well in hand—three thousand lineal yards of dredging inside and outside the harbour and three thousand lineal yards of the wall to contain the new reclamation. Small repairing works were put in hand at Tuticorin. A dry dock was designed to hold the dredging craft likely to be required at Cochin and trial borings and shafts sunk to test the soil in various places. A Mechanical Superintendent had been appointed to Cochin, and approval obtained to the fitting up of a mechanical workshop. We picked up men and plant as best we could with the funds available.

At my headquarters in Madras—a small room in the Presidency Port Office—I dealt with correspondence, especially with that of the Secretariat, collated the information coming from all sources, interviewed an increasing number of callers, made frequent endeavours to master the differences between the codes of the Indian and the Home Civil Service. When not otherwise occupied in the evening I played golf on the sunbaked course at the Adyar Club, sculled on the Adyar River, or, on Sunday mornings, bathed at a place called Elliots beach. Owing to lack of accommodation elsewhere I often slept on a camp-bed in my office or on the flat roof. On tour, when changing trains during the night, I had the same bed put up on the station platform, and often snatched a few hours of sleep under the mosquito net until a jangle of bells and other noises announced the arrival of my next train.

Looking back, I often wonder how I managed to deal so rapidly with so many activities. The root cause, of course, was the acceleration of routine administration due to my new status under the Finance Department, the second to a hard-working and enthusiastic staff, and the third undoubtedly to the goodwill and real kindness of the people I met socially. Lady Willingdon asked me once, about this time, what was my first impression of India? I replied without hesitation, 'The kindness of everyone I meet socially.' She looked very thoughtful for a moment or two and then said, 'Yes; at heart they *are* kind; I agree.' Nevertheless she had her reserved opinions, and the truth was that Her Excellency was so kind herself that some good people found it difficult to live up to her abundant and charitable vitality.

Notwithstanding this spate of activity and its rapid flowing, I was conscious of a cross-current in which I had no part. There had been another *ad hoc* Committee at Tuticorin, but it was a sorry affair compared with that at Cochin and revealed so many differences of opinion that in the end the Chairman wrote his own report and gave his own opinion, which, coming from the Collector of the District, should have carried weight. He was thanked by the Minister for his thorough and painstaking effort, but his views were not acceptable and the report was filed for the time being. At bottom I believe he was not convinced that a major harbour at Tuticorin was necessary or desirable, and if he never said as much he gave us that impression. Moreover I do not think that he captured the 'Committee spirit'. He seemed not so much a Chairman as a Director taking evidence in bits and pieces and talking much of the time himself. Nevertheless he was essentially open-minded and did his best amid a welter of lay opinions.

This disagreement over Tuticorin gave significance to the Rameswaram project, and the idea of building a port on the canal gained adherents. A meeting of officials from several departments was therefore held in Madras with Lord Willingdon in the chair. The Chief Inspector of Railways was next to me, and we listened with surprise to a discussion and a resolution which clearly indicated a change of policy in favour of a canal port at Rameswaram. 'Poor old Tuticorin,' said my neighbour afterwards. 'Did you know this was coming?' I had not been asked to speak and had taken no part in the discussion, but it seemed to me that the whole affair was premature. 'How can they settle a policy without knowing whether a canal is practicable at all?' I replied. 'My report and estimate will not be ready for some months. I don't understand it.' As we were leaving the room I mentioned this to one of the secretaries present, who only murmured a few non-committal words and passed on.

A few weeks later it became known that a Government scheme was afoot which would recognize and partly finance the constitution of a Rameswaram Canal Company under private control. Indian Tuticorin, under the influence of a long-standing and much-respected Swiss merchant, rose as one man against the proposal and left the Madras Government in no doubt as to their feeling. Again I was astonished at the unreality of the whole

proceedings. The dredging contractors in London were, I felt sure, labouring under a serious misapprehension.

Although my survey was not yet complete I had obtained sufficient information to convince me that the capital dredging would be difficult in itself and its maintenance much complicated by travelling sand dunes. As the work on the site drew to a close I decided to take my Executive Engineer from Tuticorin¹ with me and check some of the important details. Together, each taking a level and working separately, we checked the relative levels of the sea on the north and south coasts, and inspected the travelling sand dunes, their shape, and rate of progress. We took note also of their windward and leeward slopes. Our young Indian assistant² had done his work very accurately. Over nearly five miles of loose desert we found him barely half an inch out in his result, and his other work proved equally satisfactory.

The sand-dune problem was a most interesting one. I wished especially to ascertain where and how the dunes started, and at one of my visits during the south-west monsoon I noticed that on the southern side of the island the waves were casting up very small pieces of seaweed which were then blown some yards in-shore, dragging a little sand with them as they moved. When movement stopped the seaweed suddenly became the nucleus around which other sand gathered, and with such consistency of a pear-like shape as to make the process obvious.

This in turn suggested that the sea was throwing up the sea bottom itself as well as seaweed, and after a careful study of the plans and charts, which had been made over a series of years, we proved beyond doubt that the southern foreshore was accreting seawards. As the 'baby' sand dune grew with fresh sand daily and came more under the influence of wind it began to move forward again, shaping itself to an easy slope on the windward side and a much quicker one on the other. After a while some of these baby sand dunes joined forces and moved forward in larger masses, which in turn could and did engulf whatever building lay across their path.

I considered alternately many ways of arresting these dunes and eventually decided provisionally to plant a strip of casuarina forest to windward of the canal, which would at least hold up the

¹ Mr. Robert Stevenson, A.M.I.C.E.

² Mr. Ananta Ram.

travelling dunes and help to minimize maintenance dredging. Later I realized that the better course might be to gather up the seaweed as soon as it was thrown up. However, the forest of trees might yield a constant return as firewood if reafforested in proper sequence, and would give time for a more detailed study after trial. But no doubt, as we said at the time, 'mists of doubt hung over the cost of maintenance', and it would be foolish not to admit it. During the monsoon period the larger dunes we surveyed were moving forward at the rate of about one foot every month.

We had finished our survey and drawn up the report and estimate. The probable cost of the canal only was found to be not less than fifty per cent more than had been estimated previously, and, if adapted to serve as a port of call, not less than one hundred per cent more. Some weeks before, I had been given a hint by one in authority that it would be 'generally acceptable' if the full scheme for the canal port were so designed as to cost a certain sum, which now proved to be twenty-five per cent. less than my estimate. What was I to do?

Once again I sought inspiration at Governor's Shola, and, looking across to the farther heights, gradually fell into a semi-conscious state of musing over the problem before me. I suppose modern psychologists have analysed this state and could describe it in scientific detail. All I know is that fruitful ideas follow it, but how and why I do not try to discover. I have a suspicion that if I were able to explain it, the ideas would no longer come. The process is partly mental and partly imaginative; ideas flit across a screen in rapid succession, but out of focus, as it were; some stay a little longer than others, and they too disappear. Presently the mind stops working altogether and then, sooner or later—from nowhere, as it seems—a well-focused phrase, or a picture or principle springs into life and full consciousness returns. I have seldom or never had reason to doubt the truth of such mental visions. Occasionally they are born in a half-waking state of sleep about five o'clock in the morning, and appear either as words arranged in some simple form or as a picture clear in its detail. And one's first reactions are relief and surprise, 'How could I have failed to see that before?' or, 'How *different* from anything I had seen!'

On this morning they were long in making even one appearance. I wished first of all to see clearly the administrative factors, and their respective values, in the 'triangle of forces' at work in the Rameswaram-Tuticorin-Cochin problem. Here reason and experience at once suggested that when two groups fail to agree a third will slip in almost unopposed. Rather than give way to each other, the rivals will accept a third party. Obviously, in this case, there might be something of the kind at work behind the scenes, though certainly not locally at Cochin or Tuticorin. But what exactly did I know? First, that a contractor's agent wished to form a company under the ægis of Government; second, that he wished to secure for his firm the sole rights of dredging; third, that the capital necessary for the undertaking would be supplied partly, if not largely, from business interests other than that of the contractor; fourth, that some form of financial guarantee would be given by Government of which I was not fully aware; fifth, that all this had been hurried through even before the result of my survey had been known. I put all these factors together and let them simmer while I gazed across the valley and thought of other things, just waiting for the right idea.

And it came in a flash. Canals and canal ports need a Board with several Directors. The Suez Canal had many Directors, and the posts were extremely well remunerated. Who would be given these Rameswaram directorships? Could it be . . . ? I put the thought aside for the moment and leapt to catch another one. In any case, I would have to take responsibility for certifying the practicability of the scheme and for its estimated cost. Again, Lord Willingdon and some of his colleagues, those whom I believed would support me, would be retiring in two or three years. I should then be left alone with my professional reputation as my sole asset, and if I risked this by tinkering with the proposal to give it a better financial 'face', what then? The idea was manifestly improper; the report and estimate would have to go forward as drafted, whatever the consequences. So much for that as a first step, I thought, but was the proposal intrinsically sound?

Reverting to my first impressions and later considerations, I was sure that the canal port would inevitably become a terminus of the South Indian Railway, and both the railway company and whatever private company were formed in addition would have the strongest reasons for drawing traffic over that particular

route. How would this affect *all* the existing port interests on both east and west coasts? It is proverbially difficult to alter a trade route once it has become well-established, but the smallest preference in ton-mileage rates given to one railway route, in India especially, might prove successful. No; I could not square the new proposal with any of the others; it would surely upset the trading apple-cart of the whole of South India.

But might it be regarded as a 'defence' measure? Would it serve any useful purpose to the Army or Navy? Might it be regarded as a purely naval base, half-way on the sea route between Bombay and Calcutta? Undoubtedly it could, but it would cost much more to make it suitable, and even then it would be incomparably poorer in natural resources than Trincomalee or Cochin, with its enormous backwaters and vastly superior approach from the West. Moreover, even if the Admiralty were to accept the idea, the port would no longer be of much interest to a business company: it would be built and controlled by naval personnel first and last.

With a sigh of relief I knew I had found rock-bottom and realized that I was hungry. It was past lunch time and I had been absorbed in thought for nearly five hours. As I munched my sandwiches and drank a bottle of Melbourne ale, it occurred to me that I need not complicate my report with all this extra matter. Quite possibly the mere fact that the cost would be much more than had been desired would kill the proposal. Better to lie low and let things take their course. Moreover, I could offend nobody by simply carrying out my immediate instructions, and I felt convinced that the text of the report, the plans, the photographs, the unit rates quoted in the estimate would all bear the strictest scrutiny by any expert authority in England or India or anywhere else.

Well, it all came right in the end, although my action was most unexpected and unpopular in certain quarters. The report and plans were printed and circulated both in India and England, but so far as I was told none ventured to deny their clear evidence. Meanwhile I was to suffer much and in many ways, but at last, after twelve months or so, and largely through the accidental help of the last person whom I could have expected, the matter was seen in its right light by the right person, and all was changed. Meanwhile one of the Chief Secretaries had said to me privately,

‘Thank God you have got rid of that,’ and yet another, ‘I did not think you would be found strong enough to do it.’

People have sometimes asked me, ‘But what did you do socially during those early years? Was it all hard work and no fun?’ No, it was not; here is a little interlude in 1922 as a relief, ‘off the record’.

‘Company! Line up!’

A dozen or so lively young people, girls and men, came into line for the first rehearsal of *Mixed Pickles*. The girls were daughters of old residents in Ootacamund, the men were of the I.C.S., the Army, and other Services. Her Excellency had asked Colonel Morin of the P.W.D., through the Amateur Dramatic Society, to produce a revue, original and gay, to liven up the beginning of the Ooty season. Someone else had suggested the title. Colonel Morin came to me and sketched his ideas—would I help with the words and music? We made it a cabaret show. The men would be waiters, the girls pickles: green chilli, cucumber, red cabbage, cauliflower, red chilli, etc., suitably dressed for their parts. Properties: a large pickle jar, about three or four feet high, with a beehive entrance from the back drop, half a dozen or more tables for two. Curtain to rise on the men singing their song, ‘Waiters are we’, while waiting for the girls, who enter severally and at intervals through the jar and over the top, each to sing her signature tune, with appropriate words. Ensemble. General mix up. Items one by one to follow—well-known songs, dances, etc., finishing up with a rollicking war chorus: ‘It’ll be all the same a hundred years from now . . . No more a-worrying, no more a-scurying . . . No more kicking up a row!’ ‘Red Chilli’ was the star turn. Sheathed in brilliant scarlet, tall, and good to see, breathing life and goodwill, she vaulted the jar and came down stage singing:

Red Chilli I, as you know,
A condiment lively and gay.
Pickles may come and may go,
But I carry on every day . . .

Morin and I wrote the words of this very light opening sketch on a Saturday night. As soon as I had written the piano score the

Governor's bandmaster rescored it for the orchestra. We had been given only two weeks' notice, and the first orchestral practice was held on the Wednesday morning following. It proved a very popular show which packed the house for the three-nights run. The visitors forgot their worries and the soldiers gagged very humorously; I, too, forgot all about ports and canals. And I enjoyed conducting *à la* Henry Wood in his early and more spectacular fashion.

Soon after this frolicsome episode 'Ooty Dramatic' asked me to present *Peter Pan* for the children on a date a few months later. Amateurs more capable than I had been over the same ground before and left their scripts behind them. These I passed on to 'Cucumber' of the 'Pickles', who was good enough to guarantee word perfection among a troupe of intelligent youngsters by the time I should be able to return from my work and touring. In the meantime, having been given a free hand to introduce any new features that occurred to me, I spent a few hours occasionally trying to conceive them.

Returning at length, I brought in new blood from the schools, two amateur dancing instructresses, new properties, including a long stuffed crocodile worked by an invisible string across the stage floor, dress designers, and much else, held two or three rehearsals, and then disappeared on my next tour of inspection. Ten days before the date fixed for production I returned and spent four hours a day in intensive rehearsals. We were all keen, but very ragged. There seemed to be no end to the daily amendments, adjustments, pacifications of anxious mothers, corrections of lighting and curtain management, individual and private instruction, preparation of advertisements, newspaper puffs, and what not.

Indian coolies paraded the bazaar and market-places early morning to nightfall bearing the notice back and front '*Peter Pan* is Coming'. Boards were put up at crossroads: 'Straight on until six o'clock to *Peter Pan*'. Boys turned up all over the place, on the day of the Ooty races, even in the verandahs of clubs, with placards announcing '*Peter Pan Wins*'.

The Day came. Band and chorus. Curtain up. Dormitory scene. Pillow-fight by all the children, a 'free for all' which required no rehearsal whatever. Nannie and her song. A human gollywog creeping out of a large box back of stage and side-

COCHIN SAGA

stepping in her rear—a reminiscence of Irving in *Cymbeline*, this. And so on throughout, too long to describe in detail.

It was great fun for everybody. Certainly the advertising methods brought the full numbers present, as well as many turned from the doors; but the show itself—its happy and childlike spontaneity—came as a happy relief to men burdened with serious business worries at that time.

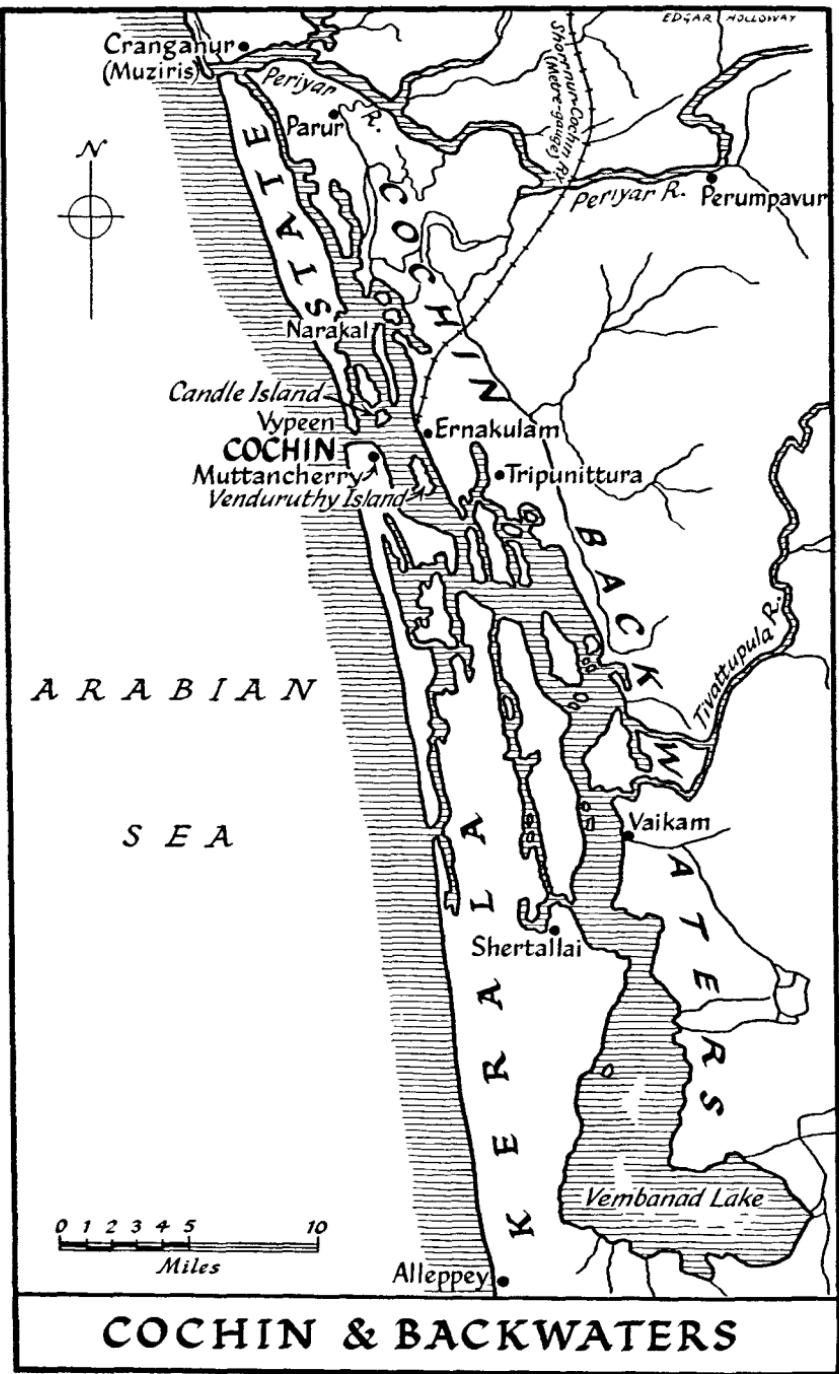
CHAPTER THIRTEEN

TALES BY THE WAY

WHEN people go to India they think mostly of the north; the India of border wars and hardy Pathans, of splendid tombs and mysterious Yogis. So they travel by easy or fast stages from Bombay to Calcutta and become saturated with sight-seeing or bemused with history and mythology. Their experience becomes top-heavy, like the map of India itself. They would be better served by starting from Malabar in the south; seeing India as a fertile place of waving palms and green valleys, of wild hills and flowing waters, and not without an early history and culture of its own.

This was my environment during many journeys in those early years. Starting from Cochin at dawn in the little *Vasco*, we would travel southward along the backwaters for about twenty miles as the crow flies to where the ample waters suddenly become narrow and then broaden widely for a distance of eight miles. At this point they merge into an inland 'sea' measuring about nine miles east and west and three miles north and south, an area known as the Vembanad 'Lake', although at this point the waters are still tidal, the range being about eight inches at spring tide periods. To the west, by a canal route, lies the Travancore port of Alleppey, known as Porcad to the ancients; southward a string of canals and lakes provide the communication with Quilon, an even more ancient port fifty miles farther on. Yet another canal continues the route to Trivandrum, the capital of Travancore. At Quilon, however, a metre-gauge railway provides an alternative route to Trivandrum on the one hand and to Tuticorin on the other, a line which runs eastward over the Southern Ghats, as these hills are called, and then descends gradually to the sea. At Quilon there is, or was, a very pleasant two-storey travellers' bungalow, a half-way house with good service, wherein I spent many restful hours.

These silent backwaters, so calm and quiet, are nevertheless the home of a cottage industry which to the over-centralized Briton



A PERSONAL NARRATIVE

would seem unique both in variety and utility. The Dutch, during the eighteenth century—the most fruitful period of their occupation—did much to increase the area of the coconut plantations; and what can be done with an acre or two of coconut palms is astonishing. Food and oil, and cooking fats, roofs and fences, mats and sails, ropes and lashings, and packings, compressed coir for export and re-use elsewhere, and many odds and ends—all these provide important necessities of life. Timber for posts and rough foreshore protection, a reddish coconut for use in decorations, strings of coconut fronds, or parts of them for long swags between bamboo poles, coconut fibre for sandals, milk for young and old and weary traveller alike; coconut shells neatly cut in half for drinking-vessels or for collecting the milky exudations from the rubber trees, or for holding the oil of lamps, or for many other domestic purposes, no doubt—all these help to make a natural economy. Add, too, the fish of the backwaters, the local vegetables and spices, the extra rice imported in exchange for surplus exports, and a wonderful picture is revealed of rewarding toil and honest living which is far removed from the narrow experiences and superficial impressions of journalists and politicians.

Through these shady groves and simple dwelling-places one may wander at will. I happened to do so first on a Sunday morning. A small Roman Catholic church could be found every mile or two, and at service time lines of white-clad men and graceful women with children were to be seen wending churchwards. The Christian religion in one form or another has deep roots in these ancient parts. There is the old tradition of St. Thomas, which seems to be fairly well established both in fact and by reasonable inference; there is the Syrian Christianity, which flourished strongly for several centuries later and prevails in many areas to-day, together with Jacobite and other branches. And of course there are the Hindu temples, the Roman and Anglican churches, and in Cochin itself one Jewish synagogue for those white Jews who came certainly not later than the seventh century, and possibly centuries before.

I was greatly struck by the reverent bearing of these lowly people; and the Sabbath air was by no means desecrated when, returning by the seashore, I found an occasional pair of fishermen in an open shed, shielded on the seaward side from monsoon

rains, mending their nets. They had probably gone to an earlier Mass and, like those I had just seen, bore the withdrawn and reverent expression which answered silently to the gentle clanging of the church bell. This glimpse of a Malabar Sunday morning photographed itself in my memory. It fitted exactly into the picture of a sound economy and a homely culture which matched so well the ecology of natural resources and climatic conditions: a simple life but a whole life.

And the churches taught, and taught English withal; the people were not ignorant. Many children could also express themselves in terms of English thought. Playing golf late and alone at the little Residency course, only a bogey thirty for nine holes, I once stood awhile and gazed at a large clump of bamboos which at that moment were gathering up the last level rays of the sun. There was a slight breeze and the temple flowers were falling softly from their bare branches. One of those brooding hushes settled down in which it seems that Nature herself bends and listens. I had stood still for a few moments when a light touch on my arm made me turn quickly. My little caddie boy looked up at me with his eyes alight:

‘Pretty, master; pretty.’

I was astonished.

‘How you knowing pretty, caddie?’

‘I not knowing how, master.’

‘Who telling you pretty?’

The boy looked puzzled and shook his head.

‘No master telling. I seeing pretty. Master also seeing?’

Truly, I thought, music and the arts have no boundaries. One touch of nature. I gave the boy an extra tip for reminding me so— prettily.

But ‘with the charm, so, too, the trickery’, not so much in these simple people as in others, and this reminds me of an incident to which I referred in an earlier chapter, one relating to the supply of our local stone. It occurred about this time and is a revealing example of departmental difficulties and anomalies.

There had been a rule of long standing which required that when stone broken for road metal, or in sizeable rubble form, was delivered by a quarry contractor it would have to be stacked in some regular pattern to admit of accurate measurement before

payment could be made. If the stone was needed for roadmaking it could be dumped near its final destination and stacked there, a convenient process, of course, while the stacking ensured a fair standard of honesty as to payment. The process of stacking, however, added sensibly to the cost of quarrying and delivery; it was accepted probably as the lesser of two disadvantages, the other being possible connivance between the contractor and the P.W.D. receiver on the site, whomever he might be.

In our case, however, the stone rubble had to be dumped straight from the native craft (*wallums*) which brought it from the quarry side to its point of deposition in the wall enclosing our new reclamation. There was no land adjacent on which to unload the stone and stack it, and such a process would obviously have involved a longer route and five separate handlings—unloading, stacking, dismantling, reloading, and finally throwing out again in position below water. Stacking and measuring at the quarry itself, before loading, gave no guarantee as to what might happen by pilfering over the seven-mile route to the harbour; and besides the cost of a permanent 'receiver' day and night at the quarry, such a system would reproduce the same temptations which the P.W.D. rule had been designed to avoid. No practical civil engineer would hesitate a moment in looking for a less costly alternative.

Duncan and Dickinson were not long in finding one. All boats which were used to carry stones, they decided, must carry a specified quantity. That quantity was to be determined by the safe carrying capacity of the standard type *wallum*. Such a quantity would first be stacked and measured experimentally in co-operation with the contractor, and to his agreement. Once agreed, this would apply to all boatloads sunk to a certain level marked by a Plimsoll line of lead let into the hull of the boat. Any boat not sunk to this level would be sent away. A most practical and economical method, this, probably reducing by fifty per cent the cost of the stone *in situ*; and all went well for a time.

There came a season when the boats were laid up for periodical repairs. Some time after they had resumed duty, my staff noticed, when plotting the monthly progress of the work done, that the advance of the wall was less than it had been. There were no appreciable differences in the depths nor in the sea bottom itself to justify a slackening up of normal progress while the quantity of stone absorbed remained the same. Why? This went on for some

time, and at last one of the staff, I cannot remember whom, had a flash of imagination. Could it be that the contractor had altered the Plimsoll marks? He had, indeed. The lead had been taken out and resunk on a lower level of the hull. So simple! So effective! And so profitable, too. Nemesis was swift. The contractor, said Duncan, will make good without payment my estimate of the stone which he has not supplied. He will also be fined five hundred rupees for misconduct. Finish. The contractor submitted, and well he might.

In due course the sword of the Executive Engineer became the pen of the Auditor acting for the Accountant General. Ha! What is this? Irregularities in accounts. Stone supply. Correspondence. Shortages. Fines. Why? All due to departure from established P.W.D. rule for stacking stone before payment! Enquiry sheet from A.G.: Why this? What's that? Executive Engineer to A.G.: Because of so and so. Accountant General to the Finance Department of the Madras Government: Just look at this. Departure from rules! Finance Department to Harbour Engineer-in-Chief: Just look at this. How could you? Harbour Engineer-in-Chief to Finance Department: Sorry; but extra cost of work if done as A.G. suggests, thirty thousand rupees. Cochin cannot afford it. Can A.G. suggest another head of charge? D.O. from Finance (Marine) Secretary: All right; but just shows how careful you ought to be. H.E. in C. to E.E.: Good work. Carry on as you are doing!

The east-coast railway from Madras to Rameswaram, and beyond to Danaskhodi, with a few junctions *en route*, afforded access to most of the minor ports on that side, including Tuticorin. It was a metre-gauge line, and not over-comfortable. It could be intolerably hot, too, though seldom devoid of incident, pleasant or otherwise. I remember one which sheds a light on many others. The first-class carriages were usually in pairs separated by a lobby which gave access to the corridor as well as to the platforms. I was travelling to Colombo via Danaskhodi and Talaimanaar, the north-western terminus of the Ceylon railway. A steam ferry connected the two ports.

Shortly after we had left Madras, at eight p.m., I was curled up on my bunk smoking a pipe when the narrow doors which gave entrance from the lobby were violently flung aside and a

THIS STONE WAS
ERECTED TO
COMMEMORATE
THE MAKING OF
COCHIN PORT
A.D. 1920 - 1940
M.E. 1095 - 1115
NON NOBIS DOMINE

Cochin harbour's memorial plaque



Bird's-eye view of Willingdon Island from the top of the signal station, looking south

classical-looking fury, dark and fiery, with 'floating hair and flashing eyes', framed herself in the doorway. She wore a long, light dressing-gown and steadied herself with shapely arms and hands against the door-posts at shoulder level.

'They've killed my baby! They've killed my baby,' she shrieked. 'Help me. Help me!'

I was still in evening kit, having dined early not long before, and, putting my pipe safely aside in a shaving mug on a rack nearby, jumped up and crossed the lobby into the next carriage. All the louvred shutters were closed and there was a dim light from a shaded bulb over one bed; a very small child lay on its right side on the other, to all appearance as still as death. Taking a few strides back into my room—there was no other passenger with me—I took out my shaving mirror and held it close to the child's mouth and nostrils. A slight dimness appeared, and as my eyes began to adjust themselves to the light I saw there was a faint flush on its cheek. The woman, panting and moaning beside me, with her hands clasped under her chin, burst into speech again:

'They're all jealous! It's a white baby! They've given it opium, and it's dead, it's dead! They've killed my ba-a-a-by. Oh . . . Oh . . .'

I spoke with some sternness:

'Listen! Your baby is alive and well. It is sound asleep, and you must not behave in this way. Go to sleep yourself. But if you are awake at the next station, call the guard and he will tell you the same. Good-night, and remember: All is well. I am sure of it.'

Back on my bunk I relit my pipe and pondered. She was obviously a 'fair' Anglo-Indian herself, good-looking in a way, as many of them are. I had heard something of an ayah's practice with a fretful child, something about giving it a finger to suck which had been dipped into a little powdered opium. This was probably just such a case, and the poor mother had worked her naturally quick emotions into a state of semi-hysteria. I was just thinking of bolting the doors and turning in for the night when the same wild vision burst into the carriage, with the same hysterical story accompanied with bitter sobbing. I rushed into her room and, this time, threw back the covering from the child and felt its little heart quietly beating. It was quite naked and looked a picture to gladden any parent's eyes. The woman stared

at me, a vision to frighten anyone. Again I told her to go to sleep; all was well. But I was hardly back in my room when the same performance was repeated. This time I told her firmly that the child's worst enemy was herself, and more or less thrust her back into her carriage, where, for the first time, I noticed a bottle of cheap brandy in a corner by her own bunk.

Slamming the door to, I thought that this woman was up to no good, and that I had better have a witness to what was happening. Next to me on the other side I had noticed a dark Roman Catholic priest and found him sitting up quietly smoking a small cigar. I told him what was happening and he nodded his head:

‘I thought I heard something. What can we do?’

‘Will you get out with me at the next station and inform the guard that the woman is behaving very strangely. I think he ought to be informed.’

‘Quite so. That is best. We will see him.’

‘Thank you very much. And now I remember it, I believe there is a nursing sister about somewhere. Perhaps I should have called her before.’

‘Very good. It is for her. I think she is two carriages away. I saw her at Madras.’

I walked along the corridor and found the Sister chatting to others in her carriage. They had not retired. Telling her what had happened, I asked her if she would check my statement that the child was well and see if it were possible to calm the mother. ‘Of course,’ she replied, and trotted briskly along the corridor. Slipping into my own carriage I kept the doors open and watched developments. Nurse had left the doors wide, too, and I saw that she was reassuring and comforting the woman in a way I dared not try to emulate. Pacifying her and eventually persuading her to lie down and sleep, she came out again, nodded brightly to me, and disappeared.

The R.C. priest and I got out as the train drew up at the next stop. The guard was not far away, and we suggested he might see for himself that all was well. He smiled knowingly and nodded. Re-entering the train he tapped on the door indicated:

‘Your ticket, please.’

The door was quickly opened and the guard entered. We waited on the platform. The guard returned.

A PERSONAL NARRATIVE

'She was very good and quite nice. Showed me her ticket. The baby was still sleeping. I saw the brandy. It was "Rupee d'or"—very strong. I think she sleep now!'

We all went to bed, and notwithstanding the guard's assurance I bolted my doors. Early in the morning I was awakened by an outcry from the next carriage. My neighbour of the night before was calling for the stationmaster. We were at Trichinopoly. A small crowd assembled round the carriage:

'I have been robbed! Robbed of all my money! What shall I do?'

The baby was wrapped in its bed-covering and in her arms. She was helped, with her baggage, on to the platform, where I heard her voice repeating her story of a robbery as the train moved on. The old priest had also alighted, and smiled slyly at me as he passed my open window.

'You were very wise, my son,' he said. 'Who knows a woman's heart?' and went away chuckling.

My return journey brought me less romantic experiences, but a very interesting conversation with an Indian gentleman of high rank. The talk circled round the Montagu Reforms and the future of India. Having come quite new to India I had no strong bent in any direction and found it easy to converse with Indians on political and social questions. They were always ready to respond, and I soon found it possible to judge between them. Those of good standing talked reasonably and with humour; the successful business men were frankly out for gain, and for that reason alone wanted India for themselves; the professional politicians, the idealists and students had mixed feelings and motives, but place-hunting stood high in them all.

My friend was quite frank about his own views.

'I wonder how many of your politicians and writers know anything about Indian life as a whole. They come out here and see Bombay and Calcutta and talk to all sorts of so-called leaders of thought and go away even more ignorant than before. You say a little learning is a dangerous thing, but you never apply it to India. You yourself have been out a few years and moved about a good deal, but how much do you really know of our family life, our customs, our traditions, and our psychology? I should like to know.'

'I confess I know little, but what I see on the surface. This, I think, suggests to me that you have the most extraordinary variety of types I have ever seen anywhere. During my first year, travelling east and west and over the hills, I saw some of the most and least attractive-looking people imaginable. I am used to that now, but they speak many tongues, and I haven't had time to learn one yet, except for a few words of Hindustani and Tamil, and Malayalam, perhaps.'

'Quite; and if I may say so, your ignorance of the language is the measure of your lack of understanding of India.'

'I accept that as a generalization, but I think I know something of the labouring classes, including the womenfolk who carry the head-loads.'

'Ah! and can you see India ever becoming a political democracy?'

'No; not in our time; not unless you accept the Greek teaching, and segregate a slave class.'

My companion was a big man of presence and dignity, and had a gift for friendship. Opening his heart with a warmth of feeling that convinced me of his sincerity he replied:

'I am but one of many, and make no pretences otherwise. I go to England for my education. I learn to like your people. I take law and eat my dinners. I like Brighton and its bracing climate. I am *persona grata* with the hotel proprietors and managers. I am one of them. I go to big shows in London and have friends highly placed. I am one of them too. I come back to India and what do I find? I know the British—their best and their worst. I know the Indians—their best and their worst, too. I know this country as no Britisher can ever know it. I know how to look after my property—and it is extensive—and I know all the Indian codes. And I am worth nothing to the British. If only your people had been wise enough to give such as me any sort of recognized post, anywhere, not necessarily in an office, yet not without an authority abroad, perhaps, or in some extra-official capacity, they would have strengthened their own standing and India, too. Some of you say we are all out for "jobs"; what about yourselves? Not you, perhaps; you are making your own way. But at Simla? Simla is a hunting ground for new "jobs", yes, and among your own officials more than any others. And now we are told "democracy is on the march", with a population of over three hundred

millions and ninety-five per cent of them illiterate. I am sorry to be so frank, but that is how I feel—though you need not repeat it.'

My friend was evidently moved and I thought it wiser not to pursue the subject, but I had not wholly agreed with him. I knew too much of the Civil Service to accept easily the idea that any newcomer could be *of* the Service and *outside* the Service; that any person brought up in another tradition could easily assimilate the objective detachment and impeccable honesty of the Civil Service as it should be. I could foresee all sorts of intrigue by other aspirants in undermining the standing of those who were holding 'extra-service' appointments, and also many departmental complications. The increasing number of Indians passing into the I.C.S. seemed to me to be the sounder way in the long run, but I was rather taken with the idea of pacifying feeling in the right places as a contemporary measure. Fortunately, at this point a third person entered the carriage, another lawyer, and thereafter I listened to these two, one English, relating case after case of legal experience and outbidding each other in startling facts and humorous recollections. I never heard so much 'shop' in my life as I heard that night, and even after I was dozing on my bunk I heard their voices, and coughed in the smoke of many cigars.

We had no Grand Trunk Road to match that of Kipling's immortal story. But the wayside of South India had its points. By road and rail and water I learnt more of the real India than I ever tried to learn in an office or a book. On one occasion a few of my staff and I ran into some danger of being murdered, and probably mutilated, although we took it quite calmly at the time. We were motoring down a road from Ootacamund which passed through the Moslem-occupied town of Chinapatna, a silk-weaving centre. As we approached a narrow section of the road the way was seen to be blocked by an infuriated crowd of men and women gathered round a motor-car, from which, running towards us, emerged two English tourists, man and woman, their hands raised in terror and their faces as white as chalk. Apparently they had hired a car elsewhere and their Indian driver had knocked down an old resident in his haste to get clear of the place. I jumped out of the car and went to meet them. They begged for a lift, and as the Moplah Rebellion had happened only a year or two before, I saw that the situation might become

dangerous. My car was already full and the only course available seemed to be that of putting them both in my seat while I stood on the near footboard and held on with my right hand through the window. Having done this, however, a low growl and deep mutterings arose from the crowd, while murderous faces peered into the car from the other side, where my wife sat looking straight ahead with her face entirely calm and unconcerned. The driver then hooted three blasts and started to move ahead, while I waved slowly and gracefully to the people to stand aside, uttering not a word the while. We passed the other car, with its driver quite safe, and apparently not at all frightened (possibly being a Moslem himself), and proceeded to the nearest railway station, some sixteen miles away. With a shade temperature of perhaps 108° F it was hot work for me in the blazing sun outside, and I was devoutly thankful to reach the station.

It appeared that our visitors were two of the members of a small travelling theatrical company, and entirely new to India. They were badly shaken, and it fell to my wife to take the weeping little woman on her knees and administer what comfort she could in a car already too crowded with a chauffeur and peon (fortunately in Government uniform) and three others, besides luggage. Incidentally, I suffered a slight touch of the sun through one eye, and cut my neck while shaving at the station waiting-room. For once, the cut did not heal, but raised a fleshy 'blob' which remains to this day, and reminds me every time I shave of that journey, and what I now recognize as a providential deliverance. The least exhibition of fear, or force, or haste, might in those days have turned the scales against us. We saw no policeman from start to finish.

CHAPTER FOURTEEN

THE WAY OF A HARBOUR ENGINEER

THE criticisms directed against Cochin in general and against myself in particular now took different forms. I was 'mad' to think that such a scheme could be carried through, or at least, for the sums estimated. The cost might be at least doubled, and then, what? The (then) post-war future of India, financially and politically, was uncertain; a slump had started and would probably get worse; I was an 'adventurer' seeking my own ends. These personal criticisms were due partly to basic ignorance of harbour design, and of the cool and faithful preparations which were being made.

The fact is that there is no problem so complex as that of the design of a *permanent* harbour, whether thrust boldly into the sea or dug out behind the foreshore line; or of its successful construction, or of its economic maintenance according to the funds likely to become available. Every case demands a characteristic solution, just as there is but one solution to a jig-saw puzzle. The pieces of this puzzle, which the harbour engineer must discover for himself, are the component parts of all the natural forces which play upon that part of the coastline now, and which may play upon it later, either by the construction of the harbour itself or by any possible combination of natural forces not immediately apparent.

It was not reasonable to expect laymen to know much about these matters, but there were other excuses for the prevailing agnosticism. Many harbours all over the world have been, and still are, being made without this careful preparation. And many suffer chronic disability and financial loss in consequence. I can only say that the two harbours in India which were designed and constructed by old Admiralty harbour engineers, Cochin and Vizagapatam, have stood the test of time. The risks and chances were methodically diagnosed and provided for. Both harbours have been, and still are, of incalculable value. Their future depends upon an equally methodical diagnosis of physical, commercial,

MONTH	ARABIAN SEA	WEST COAST	EAST COAST	BAY OF BENGAL	REMARKS
JANUARY					
FEBRUARY					Currents change
MARCH					Winds all round showing direction of preponderating Wind
APRIL					D°
MAY					D°
JUNE					
JULY					
AUGUST					
SEPTEMBER					
OCTOBER					Currents change
NOVEMBER					Winds all round showing direction of preponderating Wind
DECEMBER					D°
N.E. E.S.N.	6	2	4	5	
N.W. TO S.W.	6	9	5	5	
WINDS ALL ROUND		4	4	2	5

DIAGRAM OF WINDS AND CURRENTS. STRAIGHT LINES INDICATE WINDS AND WAVY LINES CURRENTS.

A PERSONAL NARRATIVE

and financial demands. No harbour can go to sleep when it has been successfully created. There is no possible comparison between a 'Mulberry', for example, and a Cochin or a Vizagapatam.

Thus, at Cochin, our office research and exploratory operations in the field covered a very wide area, and were completed by September 1923. We had dredged the experimental channels and tested them through the worst part of the monsoon. The wholly successful groynes at Vaipin had been extended northwards. The problems of erosion and accretion had been studied and methodically tested by practical experiments and surveys over several miles of coastline. Our meteorological records and the analyses of tides, currents, winds, and waves were reasonably complete, also a new chart of the harbour.

We had also made excellent progress with the dry dock and built part of the reclamation wall. We had trained the nucleus of a good staff, and we knew exactly what nature was trying to do at Cochin and how best to adapt our designs to her own inclinations. For most of this I was deeply indebted to my new staff, especially the Executive Engineer (J. H. Duncan, B.A., B.E., A.M.I.C.E.), to Dickinson, of course, and Herbert Reed, the Mechanical Superintendent. Abraham, the Surveyor, and Nathan, the Foreman of Works, both Indians, were invaluable in their own way, very sound men of character and ability. I was as fortunate with my indoor staff as with these others. It might have been far otherwise.

We finished the experimental dredging work in May 1923. It had disclosed many things besides the nature of the soils and the dredging conditions generally. We dredged up many old cannon-balls, dating probably from Portuguese or Dutch battles, heavy stones, hoop iron, bags of rice long buried in the soil, and other impedimenta. All this gave valuable data in the design of the big dredger we had in view. The monsoon conditions brought into the channel a good deal of silt generally and some piles of sand near the centre of the bar, where the adjoining bottom was only ten feet below low water. The natural ebb tide, reinforced by an enormous quantity of fluvial waters brought down to the back-waters by the monsoon rains, widened the channel to more than three times the cutting we had made. I had no doubt whatever that a permanent channel navigable at all seasons could be made

and maintained provided we chose the right type of plant, gave the channel its right orientation, and its right depths and widths. After much thought and discussion with my staff, I decided to allow plenty of depth to take monsoon silting, and a wide 'berm', or stepping-back of the side slopes of the excavation, to take any falls of sand which might come from the bar section and block the channel proper.

This all sounds very simple and straightforward, but, once more, a layman finds it hard to conceive the scale and difficulties attending such an operation in the open sea. Imagine an excavation three miles long—stretching say from the Marble Arch to Kilburn—and seven or eight times the width of the Edgware Road. Picture a vast array of 'bull-dozers' excavating this enormous ditch to an average depth of about eighteen feet, and then see the long trains of muck-wagons being hauled nearly a mile away and side-tipping the spoil into deep hollows. Make a further effort of the imagination and see all the bull-dozers, trucks, engines, railway tracks, etc., swaying from side to side and up and down in long or short undulations, and you get some idea of the risks and chances inherent in the adventure. Somehow we had to make an 'ocean' dredging unit consisting of a powerful dredger, attached to a long pipeline, capable of dredging and pumping at an average rate of fifteen hundred cubic yards of spoil per hour, and finishing the whole work in four months at the most. Without my Admiralty experience of work in rough seas—and how well I remembered the cold frights I had had at first—I do not think I could have made such a venture of faith. As Sir Frederick Palmer was to say later, 'The Battle of Cochin was won on the rough seas of Spithead', where, in 1906-8, I had deposited under water the first two hundred heavy units of the Southsea-Horse Sand Fort ship barrage, each weighing sixty-three tons, and immediately afterwards assisted in the salvage of H.M.S. *Gladiator* off Yarmouth in the Isle of Wight. Thus it was that in good faith and confidence I was able to recommend the carrying out of the major dredging works, the manner of their execution, the plant necessary for the work, and the probable cost of the whole. I felt sure there would be difficulties, as in all works carried out in rough waters, but had no doubt we should overcome them as they arose. This is a common experience, familiar to all Admiralty civil engineers or contractors.

The Madras Government was not sure about my conclusions and had reasons which, from an administrative point of view, were bound to be considered. They could refer to a previous report in which, some years before, a well-known harbour engineer had given a positive warning against suction dredging in the manner proposed as being 'utterly illusory'. Another and an even better-known firm had stated that unless the channel could be maintained by dredging *during* the monsoon it would be obliterated by silt and sand. Not only so, but to a sailor 'average depths' means nothing: one substantial peak of sand washed into the 'bar' section, for example, would block the whole channel.

I freely admitted all this, and could only reply that in my opinion the dredging would be found practicable, that I had had practical experience of work in rough seas exceeding that of previous advisers, and that my estimate of the scouring effect of the monsoon rains flowing from the backwaters and their hinter-land would prevent the formation of peaks, provided we made the silting shelves on the sides and dredged the channel deep enough to allow for a large measure of silting which could be cleared away each year when the calmer seas prevailed. After much consideration Government decided to refer the whole of the papers and plans to a committee of three expert consulting engineers in London for their opinion. Lord Willingdon's comment on this decision was brief and to the point: 'I agree, provided Bristow goes with them', or words to that effect. I could have desired nothing better; in fact there was no real alternative.

The terms of reference were drawn up by the Secretariat without consulting me, and to this again I had no objection whatever, though it was certainly unusual. What did surprise me, and astonished every member of the Committee, was the fact that I knew nothing of these terms of reference until I arrived in the committee room in Westminster a month or two later. On reflection, however, I realized that this, too, was all to the good from my point of view. Government had taken its own line and would be judged on its own questions.

But here again I was to be surprised more than ever. The Minister chiefly responsible had just retired from India on reaching the age limit. He wrote privately to the Chairman of the Committee stating in effect that he could give useful information regarding the more administrative aspects of the case. The

Chairman told his colleagues this at our first meeting and that he had replied personally. The terms of reference, he had said, were purely engineering ones and no administrative matters arose out of them. Putting two and two together, the Committee saw a connexion between these two unusual incidents and shook their heads significantly. I did not tell the Committee that this same Minister had already approved the scheme for Tuticorin and had asked for no such expert assistance; but my mind went back to Mr. Hutton and his apprehension of troubles *vis-à-vis* Tuticorin.

Having brushed this aside, the Committee set to work, and for ten days during a hot July I was under cross-examination such as I had never experienced. One member of the Committee became by mutual consent a keen 'Counsel for the Prosecution' against my evidence, but I took it all in good part. As the Chairman said, later, 'I hope you don't mind M.'s tenacity over small points. He's very useful really; he is putting up all the snags.' I replied that I quite agreed with him and was 'there to be fired at'. If anyone could tell me where my views were wrong, so much the better for me, to say nothing of Cochin. What else could I say? These men were all distinguished civil engineers. We spoke the same language and were moved by the same purpose; to answer the terms of reference as factually as we could.

Finally the Chairman wound up the Committee by taking each question asked by Government and drafting a reply in consultation with the two others. I added nothing to this, but after they had finished asked that for convenience's sake a short covering letter in non-technical words might give the gist of their longer communication. I said that this summary would help Ministers and Secretaries as well as Governors and laymen generally. Their replies had confirmed in all essential respects what I had said in my reports. The scheme, they wrote, was a reasonably sound proposal; they had been much indebted to me for the help I had given them, and they had sat on ten occasions.

Lord Willingdon's period of service as Governor of Madras had also come to an end, and he was in London at the time. After sending a prearranged code telegram to the Marine Secretary in Madras announcing the result of the enquiry, I wrote to Lord Willingdon enclosing a copy of the Committee's Report. In reply he wrote a charming letter of congratulation in which he said that the Report was the most complete justification of my proposals

A PERSONAL NARRATIVE

he had ever seen; 'he was delighted, for it fully bore out the confidence he had always had in my professional skill and integrity'. He had written to the late Finance Minister accordingly.

Somehow or other a version of my private code telegram to Madras appeared in the Madras Press the day it was received by Government. Perhaps not unnaturally, the Marine Secretary wrote to me asking if I had given the information. Perhaps not unnaturally, I was rather indignant and repudiated the suggestion. As I discovered afterwards, he should have looked nearer home. It was his own Indian clerk-superintendent who decoded the telegram and could not resist the temptation of telephoning its contents confidentially to my office manager. He in turn had to tell one or two of my staff 'very privately'. A messenger behind a screen picked it up. Once it was known so far it was a short step to the Press reporter, for this was News, and news of a kind which set everyone talking.

The Committee's Report proved the saving of Cochin at a critical time. It broke the back of the opposition, it gave Government confidence, and strengthened my own position. The Port welcomed it and agreed to raise the dues to pay whatever cost was involved. With this assurance, the Madras Government approved the next stage of the work on the lines proposed, as well as the purchase of a dredger, for which tenders would be invited from firms on the Continent in addition to Great Britain. In due course the contract was won by a Scottish firm.¹

About this time, too, the four-party agreement initiated by Lord Willingdon was also signed and the way was cleared of obstacles, administrative and engineering, for the next few years. My agreement with the Government of India was extended for a further period of five years, with the title of Harbour Engineer-in-Chief to the Madras Government and with an increased remuneration consistent with the new rank. The stormy period was over, but not for long. Cochin, it seemed, was to have a fresh storm every year blowing from one quarter or another. Psychologically, it was a bad climate, really. It got one down. Little things that pricked and wriggled came one after the other, until, during a week or two of very damp heat, one suddenly pricked deeper than the others and made us bark. Sometimes, if there was a dispute over a principle, the bark was taken up by a whole

¹ Messrs. Wm. Simons & Co. Ltd., Renfrew.

section of the community—like a dogs' chorus in the night. A month or two later one began to doubt the whys and wherefores. It had seemed so real before; so silly now. Gradually I began to recognize all this as part of the general conditions of work at Cochin and so became inured to it.

Well, between us we had won the first round. None could accuse Government of lack of administrative prudence. None could deny that when it came to the point the Cochin merchants had stood loyally by their agreement of 1920, and also by our local Executive Staff, who indeed richly deserved their confidence. Five years seemed a long time to me. Three years would have sufficed were it not for the administrative complications, but these were inevitable in a situation which was unique in my knowledge then, as it is now, and in the end Government had been fair and even generous to me, a practical mark of appreciation which no civil servant ever underrates or forgets.

Only Mr. X. remained unconvinced and malicious. Early in 1924 he had sought an interview with Lord Willingdon on the ground that he was starting a charitable enterprise and would like His Excellency's support. Having gained admittance he turned the conversation towards Cochin. The Governor's Private Secretary was present and spoke to me not long afterwards. He looked rather troubled.

'Did you know that fellow X. has seen His Ex. about a proposal to build a Mission Hall?'

'No. What exactly did he want?'

'I'm not sure he really wanted anything of the sort. His main object seemed to be to queer your pitch at Cochin. Apparently he was out to sow trouble: said you had broken every principle laid down by previous experts, and that your designs were wholly bad in practice, and so on.'

'What did His Ex. think of it all?'

'I'm not sure. He listened, of course, and gave him plenty of rope, but he told me I could warn you about him.'

'Thank you. . . . I shall be interested to see how much he gets for his Mission Hall!'

'H'm. Don't take him too lightly. He is a very dangerous fellow—so plausible . . .'

And the P.S., still looking rather serious, strolled off.

A PERSONAL NARRATIVE

A year later a woman friend, very bright and knowledgeable, spoke to me at a 'charity' cocktail party.

'Ah! I've been looking for you! At last I've discovered all the truth about you and Cochin.'

'Heavens!'

'You may well say "Heavens". Did you not alter everything and upset everybody?'

'Not everything, nor everybody.'

'Have you not wilfully deceived everybody and are you not playing an underhand game for your own ends?'

I began to see light.

'And who told you all this?'

'Well; I was having lunch with the P's. A very presentable and courtly gentleman sat next to me and began to tell me all about Cochin. I don't think he knew how much I knew already.'

'Ah! and what did you say?'

'I asked him, very innocently, whether there had not been an *ad hoc* Committee some years ago? And had they not made a unanimous report? He said, "Ah! but that was all due to pressure by Lord Willingdon, who had been led astray." I then said, "But hasn't he (that's yourself) just returned from London with complete agreement from experts to all his proposals?" "Oh, that.... He can bamboozle anybody who does not know the place as I do. He is a very dangerous man."'

'H'm. May I give one guess at his name?'

'Try!'

'It was Mr. X.'

'Right first time, but you can afford to be magnanimous towards him. I hear you have scored heavily.'

Mr. X. left soon after to retire in England, and his letters to successive Secretaries of State for India about my misdoings at Cochin are still, I believe, in the records.

CHAPTER FIFTEEN

TRAVAIL AND TRIUMPH

THE affirmative and timely report of the Consulting Committee had been dated 7th August 1924. After completing other duties I returned to India in December, and on 19th February 1925 the Madras Government, who had secured the formal concurrence of the Port Conservancy Board, informed the Government of India that they were satisfied that the report of the experts indicated that a harbour could be made at Cochin at a cost which the Port could afford to bear. On 31st July 1925 an order was issued confirming the four-party agreement between the Governments of India, Madras, Cochin, and Travancore, to which the Port had likewise consented, in writing, on 13th November 1924. (It is interesting to note that the Port agreed to the harbour scheme going forward exactly one calendar month later, for these days and months were those of my marriage and birth.) I was out of the country on both occasions. Meanwhile action had been taken to hasten the issue of particulars governing the purchase of the dredger required for the work, and, there being no other matter demanding my presence in India, I left Duncan in charge of both Cochin and Tuticorin and was given leave for eight months, for after more than five years of concentrated effort I realized that I was much overstrung and needed complete rest.

A delightful sea voyage to Plymouth in the B.I. *Dumana* started the cure, and the good sea air of Cornwall completed it. Long walks over cliffs, occasional golf, visits to friends inland, lunches of bread and cheese and country ale at stray inns, sleepy afternoons under a tree with a book—these filled up the autumn. In winter my wife and I went to Bournemouth and lived chiefly on symphony concerts, and for myself, golf at Meyrick Park in the mornings. We finished our leave in London, where for the month of February 1926 I was busy with work arising from the purchase of the dredger and other official matters. We left in March, and

returned safely to India in April. The dredger was to be named the *Lord Willingdon*.

However, after the mental numbness to which I had succumbed on the voyage home, and away from the routine demands of India, my mind began to dwell not so much upon my work as its new administrative environment. On one occasion in Ootacamund I had stayed for a week with the Collector, a senior member of the I.C.S. during, I think, his last year of service. He was very frank, and one night after dinner we sat before a log fire with coffee and cheroots. He lived by himself and was glad, I think, to have someone newly out from another Service with whom to exchange news. I told him of my late committee experiences in the Admiralty Secretariat and found that he knew some of the Higher Division Civil Servants involved. This led to a conversation about the rapidly changing conditions of the Civil Service, and he asked me whether these were common with life generally in London—were social conditions as they had been before the war? I replied that so far as the country districts were concerned I thought there was little change, but that London had deteriorated badly. In 1917, when I arrived from Rosyth, I was astonished to find so much flaunting vulgarity and sophisticated cynicism rubbing shoulders. I gave him a few examples.

After a few minutes, and gazing into the fire, he said that he was afraid India was moving in the same direction; that too many of the best of the younger generation at home had 'gone out' in the war, and merchants as well as the professions were feeling their loss. Not only so, but their successors had in great measure passed through the war and no longer had the same faith in service as a principle, while their behaviour suffered from the abandon of victory following upon the carnage and desperate strain of trench life. I suggested that the change might be a temporary one, but he shook his head: 'There has been a climax; rebellion, social or otherwise, is in the air even here. Montagu does not know what he has done in India. These damned politicians will ruin us sooner or later. I am glad that my service is nearly over.'

I realized later that there were others in the I.C.S. who at that time were nettled and resentful of changes which not only undermined their own authority but, as they honestly believed, the security of India itself. I arrived at a time when the change-over was in the making, and often during that long spell of happy

idleness in Cornwall it occurred to me that many of my differences with the Secretariat may have been influenced by this upset in the administration. I realized, too, that I should no longer have the continual moral backing of Lord and Lady Willingdon and that the Marine portfolio would probably pass into Indian hands. On the professional side, I was disturbed about a serious harbour trouble in Bombay, where it had been proved that a great scheme of expansion at Back Bay had been mismanaged and underestimated, in circumstances which brought little credit to the official advisers. I knew enough of India to feel sure that were some temporary mishap to occur either at Cochin or Tuticorin there would immediately be a similar hue and cry and that I should have to take the rub as best as I could. More than once I blessed my lucky star for the setting up of the expert Consulting Committee and their unanimous approval of the Cochin project.

There was another trouble looming up of which I had recently been advised. Apparently, and notwithstanding previous agreements, there were certain firms, European as well as Indian, who, with the departure of Lord Willingdon, were resenting more openly the probable loss of their lighter traffic. My informant in London, a friend home on leave, gave me specific information of these movements and warned me that the opposition would not be based upon these grounds but upon one arising from any fresh issue which, coupled with the 'Back Bay scandal' as a precedent, could be magnified out of its real importance in order to create a crisis from any and every contingency, even though such contingencies might have been foreshadowed in the proposals and estimates. Altogether, I realized that things were going to be difficult. How difficult, I was soon to discover, but, as it happened, it was Lord Goschen, the new Governor, a new Indian Law Member,¹ and a new Secretary, Finance,² who then rallied to my aid and saw me through a very harrowing time. Fortunately my wife was able to accompany me. She had passed a strict medical examination and been given written instructions by the late Sir Frederick Price as to her 'rule of life', a document which proved to be extraordinarily prophetic. Even to-day if she forgets it she is quickly reminded that liberties may not be taken with a sensitive heart and a wayward pulse.

¹ Sir C. P. Ramaswamy Aiyar.

² Sir George Boag.

We left Tilbury on 12th March 1926, in a bitter north-east wind, by the P. and O. *Mooltan*. Lord Irwin, the new Viceroy-to-be, joined the ship at Marseilles on the 19th. Many virile Australians, however, were returning from their tour homewards, with the happy result that if we were inclined to tread softly in one direction we could let ourselves go in the other. The vessel landed us at Colombo on Easter Sunday, 4th April, the sixth anniversary of my arrival in Madras, and from there we shipped on the following day to Tuticorin, where Duncan and Stevenson met us on landing. These particulars I have gathered from my wife's diaries. Of the thirteen months which followed, my prevailing impression is one of troubled and continuous confusion, and were it not for the same record I should not know now that on seventeen occasions I had to leave Cochin for Madras or Tuticorin. We had rented an old but comfortable house at Cochin and a wooden shanty at Hare Island, Tuticorin.

The new dredger *Lord Willingdon* steamed safely over the bar at Cochin in May 1926, having luckily refloated after running aground in the Red Sea during a thick mist, damaging her plates and frames on the port side forward. She was put into our dock at once and repaired at a cost of about £2,500. Her discharge pipeline had already been put together in the dock and now lay grimly afloat in the stream, some one thousand three hundred-yards long. It looked really formidable thus, a thirty-nine-inch pipe joined at sixty or eighty feet intervals with 'universal' ball-joints flexible in all directions, each length supported by two heavy cylindrical pontoons connected with the next unit by heavy chains. A narrow gangway ran the whole length on either side.

There were two serious mishaps which threatened us and our work during those same thirteen months. On 7th August my wife had begun to take a new bottle of a heart and nerve tonic prescribed by Sir Frederick Price, and had passed a very disturbed and painful night. In the morning, still sleepless, she lay as one dead or dying, and as I passed from her room to fetch the doctor personally some impulse made me pick up the bottle and swallow a dose myself. In a moment or two I fell to the floor with indescribable feelings of pain and malaise. However, in ten minutes or so I was able to raise myself and speak. 'It is deadly poison,' I gasped, 'and you have taken three full doses since yesterday afternoon!'

The physician had in fact prescribed a minute proportion of arsenic with the other ingredients, but the local dispenser who had made up the new bottle had apparently misread the sign of a drachm for that of an ounce, or some such error, and had my wife not become constitutionally accustomed to the mixture, which suited her very well, she might have died in the night, or even while I was writhing on the floor. I might have done the same. One can imagine the wild speculations and floods of rumours which would have followed. Even now the bare possibility of it makes me wince.

An equally grave danger was averted on 17th May 1927. The *Lord Willingdon* burnt oil fuel, and the custom was to light the burners with a piece of cotton waste dipped in oil and set afame. This was put on the end of a rod and applied to each burner in turn; it was then withdrawn from the furnace and dropped into a large bucket of sand which also caught the oil drippings. On this occasion the man responsible for replenishing the sand had not done so. There was a little oil in the bucket, and in a few seconds it flared up and spread so rapidly that those in the boiler-room took flight. An English engineer, Mr. J. H. Atherton, dashed into the room and with smoke and flame about him seized the fire extinguisher, found the source of the flame and put it out, whilst clouds of oily smoke rose from below to horrify all who were about at that time.

Fortunately the vessel was lying in harbour. Atherton was unhurt, and but for his prompt and courageous action I hesitate to say what might have happened both to the ship and to the port, for although the vessel was insured, the delay in replacing it and the loss of confidence in my department might very well have spelt 'finish' at that time when, as it seemed, the whole of South India had risen against the continuation of the work. It was a merciful escape, and I mention these two instances of extreme hazard providentially averted merely as examples of many others through which we passed then and later.

My wife quickly recovered, and we dispensed with the services of that particular dispenser for all time. Such mistakes, we found later, were not then unknown. Indeed, there was a parallel case in Madras during the same year. A young Indian lost his wife in like circumstances, but rumour alleged that he had deliberately tampered with the chemist's mixture in order to render it poisonous,

as he wanted to be free and marry another. This was utterly false, but the rumour persisted, and eventually drove the poor young fellow out of his mind.

There is much to relate of purely technical interest during this period, but I have already given it in Paper No. 4756 of the 'Minutes of Proceedings' of the Institution of Civil Engineers¹ (Bristow on Cochin Harbour Works), and for the great majority of readers this would have but minor interest. I must, however, record the facts as briefly as possible.

Naturally, we had decided to train the dredging and pipeline crews on work within the harbour before sending them outside on the bar. It was not easy to do this. A plant of such magnitude works efficiently only when men and machinery work together as one, when anxious flurry and nerve-racking exasperation give place to an automatic smoothness and regularity born of experience and selective watchfulness. No form of dredging provokes such daily cares and complications as that of a powerful suction-cutter dredger when cutting up and pumping a heavy load of mixed materials through a long pipeline which must advance rapidly with the progress of the ship. The dredger itself needs six anchors, two each side, bow and stern, and two fore-and-aft. The pipeline carries many more, and a tug is occupied wholly on the work of grappling and relaying all these in such ordered sequence as never to stop the plant working. This unity of effort can be born solely from experience past and present, 'past' deciding the design and equipment, 'present' adapting the design to new conditions, making minor alterations, and training new crews.

It seemed that people could not realize this. They knew that a new motor-car, especially in those days, had to be 'run in', but thought that a complicated plant costing £250,000 (in 1925) and working in the open sea should escape any such contingent hitches. Actually, however, as I had been warned, the parent force was the *wish*: to criticize the work itself and set up an atmosphere of distrust the real objective. 'No ball!' was shouted even while the bowler was still running up to the crease. This motif was worked up and developed in many forms, largely proceeding however from one source, and at bottom lay the gnawing

¹ Vol. 230, Session 1929-30, Part 2.

urge to preserve the lighterage profits. It is quite true that when we started work at sea we had the ill-fortune to encounter a heavy gale the next day and had to bring the pipeline back to harbour for repairs. And this happened again about Christmas a month or so later. But after that, although I knew that we should have to redesign the balljoint connexions, we were able to work double shifts until February and dredge the very respectable total of 665,000 cubic yards of material, the average rate easily exceeding contract requirements. Lord Goschen was good enough to express his satisfaction publicly.

As previously mentioned, the Hon. Law Member and the Finance Secretary (Marine) took the same line and accepted my proposal to redesign the balljoints and pontoon connexions in consultation with our expert committee and the dredger builders. In June 1927 I was home again, first in London settling the design, then in Glasgow putting several firms at work making new parts and forwarding them to India in time for the next season's dredging. Meanwhile the whole plant at Cochin was engaged in the calm waters of the harbour, where it pumped no less than two million cubic yards of material into the reclamation area between May and October before going into dock for over-haul. This fine performance finally killed all rumour as to the unsuitability of the plant. Many acres of hard new land suddenly appeared in the reclamation, and the nervousness of the plotters became even more obvious. As there is no proof so flattening as visual proof they would now have to invent other means of dissent.

Precisely the same course had been followed at Tuticorin and very largely for the same hidden reasons. A safe harbour at Hare Island, connected by rail or lorry traffic to Tuticorin, would partly dispense with the lighter traffic, hasten the turn-round of ships, and facilitate distribution generally. A new dredger, the *St. George*, known as a rock-breaking 'dipper', had arrived and was dredging the softer coral with ease. It was also making acres of good hard reclamation with its spoil. Unfortunately, when we had dredged to within a few feet of the required depth we struck a layer of most tenacious conglomerate so compact that we could neither undermine it by the special dredging bucket nor break it by the four-ton rock-breaking spear which formed part of the equipment. With much trouble we blasted a section of this layer

A PERSONAL NARRATIVE

and brought up a slab about two feet thick showing a twelve-inch circular hole bored right through it which explained what had happened; the rock-breaker had bored through it but would not split it.

The annoying feature was that the original samples of borings did not disclose the presence of this rock. Either the special boring tool must have gone through it or the foreman in charge had made a very serious mistake in his returns, or, by a most unlucky chance, the borings had just missed the rock conglomerate. The area, we discovered by further borings, was covered with many patches of the same material, and if that obstinate two-foot layer had been four feet deeper in the softer material we should have had no trouble. Apart from this, except for the kind of works contingencies inevitable in all harbour schemes, everything was going reasonably well. What was I to do? I decided at length to recommend the purchase of a more powerful dredger and a different type of rockbreaker specially designed to split rather than to bore.

However, I think the 'Back Bay scandal', as it was called, influenced the proceedings at this point, but apart from one or two firms there were others, European and Indian, who had never wanted more facilities than they already had, and viewed with ever growing concern the loss of their lighter traffic. Moreover, certain Colombo merchants had either been invited or had come to see the work on their own account. They had business relations with Tuticorin and also owned lighters at Colombo, where, during monsoon and other stormy conditions, ships could not lie at wharves, even if constructed. A great agitation both against the idea of a harbour at all and, against myself in particular, as its 'protagonist' and executive, followed my straightforward account of the situation. Protagonist I had never been. In accordance with Government orders I had done the best I could with a very difficult problem.

At this stage of the proceedings, to my great regret, Dickinson was recalled by the P.W.D. for work in his own department, and Duncan went on leave preparatory to retirement from India. Fortunately, however, an old Admiralty colleague was engaged at Vizagapatam on the harbour work there,¹ and I found him willing, with his Chief's consent, to do duty for me while I was

¹ Mr. H. B. Rattenbury, M.I.C.E.

away. We were used to these sudden emergencies in the Admiralty and had little difficulty in holding the reins wherever we were sent at short notice.

Immediately upon my arrival in London in May 1927 our Cochin Committee tackled, and soon agreed with, my proposals for improving the pipeline connexions and added further precautions of their own; but the Tuticorin enquiry had to be postponed until September, as the Chairman and others were engaged or taking holidays during the summer. In due course I was able to produce prime cost sheets of our dredging expenditure, samples of borings, photographs of the hard material brought up from the bottom, and various other details sufficient for their purpose. On this evidence they were satisfied that the work had proceeded, so far, with commendable economy and that the technical proposals for its continuation were the best that could be advised. The Chairman, however, was of opinion it would be better policy to dredge a channel from what we were doing at Hare Island right across to Tuticorin itself and place the main development on a reclamation parallel to the existing water-front. I was not then sure if this were practicable, and certainly not with the funds available; neither was I sure it would be welcome to the merchants of Tuticorin, for whereas in the Hare Island scheme it would have been possible to use their lighters between ship and shore in competition with, or in alliance with, a lorry contractor using the road, the new proposal would render them completely redundant. Consequently I made no remarks on the subject, having established all I wished to confirm, namely, that what we had already done and the plant we proposed to buy if the work proceeded were in order.

The Committee's Report was drafted on these lines. On returning I made an estimate of cost for the new scheme. Tuticorin objected to providing the money for it, and, to cut the story as short as possible, the Madras Government then informed the Government of India that for reasons given they were not prepared to pay for the scheme on the grounds of public necessity. The Government of India concurred, and that was the end of the matter, but by this time it had dragged on for about two years or more after I returned in October 1927. One of the Madras Secretaries told me that he was heartily glad to see the end of it; he knew quite well the early facts of the case, and by that time

everyone had realized that the Cochin project had proved itself infinitely preferable from all points of view.

It is pleasant to end this trying period on a happier note. As a result of my swift journey to London and the urgent collaboration of all concerned in London and Glasgow, the *Lord Willingdon* and its crew went out to sea again in December 1927 richer in experience, and with all its new balljoints and connexions designed, made, dispatched from Scotland, fitted, and ready for service *in less than five months*. Moreover, the vessel then dredged a through channel eleven thousand feet long by four hundred feet wide and thirty-two-and-a-half feet deep below low water—two very fine efforts by all concerned. Purely as a dredging feat, the greatest possible credit was due to my new Executive Engineer,¹ the whole of the mechanical shore staff, the ship's engineers and deck staff, and not least the Dredging Masters. The ship had dredged and pumped more than two and a quarter million cubic yards of material for less than twopence per cubic yard, and this despite a heavy storm on 3rd March which sunk four pontoons in the pipeline and caused a week's delay.

Something very strange, indeed quite phenomenal, happened at the end. We had all gathered on the ship to be 'in at the death' on 30th March, and when the dredger finished its last cut, sirens were blown and flags hoisted to proclaim our victory. At this precise moment the sun, which had been obscured by cloud all the morning, suddenly shone through; and then, close round it, there appeared a firmly knit halo of the seven rainbow colours, vivid and brilliant. The Moslem deck-hands were the first to see it, and became solemnly dumb; Milne pointed it out to me in surprised silence; I, too, could say nothing, but felt it was all in the picture, and noted its perfection of colours and position relative to the sun. Then the clouds slowly covered it, and the vision faded. Dramatic, symbolic, unique, prophetic? It was all of these to me, for I had never seen, or even heard of such an occurrence, and its appearance at that moment, of all others, reminded me of some of the Old Testament stories. This happened at or about noon on 30th March 1928, Indian time.

We marked the new channel with buoys in order to outline its course and help us to keep a close check on the silting during the

¹ Mr. A. G. Milne, C.I.E., M.I.C.E.

monsoon before declaring the channel open, but shortly afterwards a certain Captain Bullen of the small coasting vessel *Padma* put his blind eye to the signals telling him to keep outside, and brought his ship into harbour. My executive, Milne, and the Port Officer were then waving red flags at him from the shore, whereupon he dropped anchor and made his peace as best he could. The news had spread with Eastern rapidity and people were flocking to the shores from the moment it became clear that the vessel was crossing the bar. This constituted the real opening of the Cochin Harbour, and its effect was profound. Before, very few people believed that we had really dug a deep channel, but, as with our reclamation, here was the proof for all to see, and the news flashed throughout India: Cochin was open to sea-going vessels! That which for nearly seventy years had been proclaimed impossible or highly improbable had been accomplished. The Captain of the *Padma*, too, had his reward, for he left harbour carrying every ton of cargo the ship could hold. Whatever the European merchants might say or do, the Indians were going to use the harbour from then onwards.

This unexpected demonstration was as welcome to Government as to myself. They had trusted me, and I had not let them down; for eight years, between us, we had fought off every attempt to sidetrack Cochin and found a way through every engineering and other emergency. But we were not yet through our immediate troubles.

The next season's work entailed the lengthening, widening, and deepening of the channel in such measure as to admit, at any state of the tide and at any time of the year, any vessel which could pass through the Suez Canal. In addition we had to complete the dredging of the mooring areas inside the harbour in order to provide 129 acres of deep water and approximately 150 acres of reclamation, much of it consisting of heavy sand and oyster-shells. Outside we knew that the final dredging might be even more difficult and that, as before, we should have to dredge and pump through the pipeline large quantities of miscellanea such as jettisoned cargo, bundles of hoop iron, cannon balls, masses of tangled wire rope, remains of old boats, heaps of stone ballast, and, as we were to find, much in the way of specie, the coins rattling through the pipeline in showers which, alas, it was quite impossible to save before the tremendous discharge

of the pipeline scattered them and buried them in its own spoil.

One English foreman did indeed try his luck, holding a pail near to the lip of the pipe with one hand and a metal stay on the pontoon with the other, with the result that both arms would have been drawn from their sockets had he not dropped the pail immediately. I often stood on the rounded surface of the pipe to hear and feel with the soles of my feet the coins as they passed through; there was no mistaking what they were: relics of many a wreck, or fights in the days of the Portuguese or Dutch, perhaps.

We started this work on 3rd December 1928 and completed it in three months and ten days, having dredged and deposited 2,801,910 cubic yards of both light and heavy spoil in 1,673 pumping hours at an average rate of 1,675 cubic yards per hour. The work was finished eighteen days before our estimated date, and while I was in Madras. The sequence of 'thirteens' was as follows: the end came during the thirteenth hour of the thirteenth day of March 1928; the telegram from the Executive Engineer Cochin was numbered 13 by the Post Office; the facts were given in the *Madras Mail* on page 13. Finally, the *Lord Willingdon* came into harbour flying every flag on board, having beaten all records for work in the open sea for continuity of pumping, output, and lowness of cost—the rate amounting to about twopence per cubic yard, including docking, major and minor repairs, fuel, labour, and all other working costs.

We now had a channel three miles long, four hundred and fifty feet wide, giving thirty-five feet at low water, with 'silting shelves' or berms through the 'bar' section, four thousand feet long, one hundred feet wide, and thirty feet deep, *alongside* the channel proper to catch falls from the ridges above. This performance was rightly recognized by Government in the *Gazette* as being of great merit.

My health had been uncertain since our 'bad' years of 1926-7, when something went wrong with my heart and forced me to give up my pipe, a great loss—even to-day one or two pipes will increase the pulse rate by fifty per cent—and I broke down at this point. A medical board examined me thoroughly and recommended twelve months' sick leave. Since my previous leave in 1925, I seemed to have passed through one crisis after another, and now realized that if I did not go at once I might not go at all.

COCHIN SAGA

My wife had also suffered from a very hot season in Madras, where I was then stationed, and I remember one dreadful night when a servant and I carried her, half-unconscious, to the flat roof, laid her on a long chair, and watched her the night through. About four a.m. she dozed for a few hours and then recovered sufficiently to board a ship going to Colombo, where the amenities of the Galle Face Hotel for a week enabled us to carry on a little longer. She had been a tower of strength during those four years. The peaceful routine of our house had been as regular and smooth-running as a turntable on ball-bearings, and her cool judgement and resource in every crisis quite remarkable. On the whole she left India in better health than I.

We sailed on the Orient Line *Ormonde* from Colombo during the night of 3rd-4th April 1929, reaching Southampton on 24th April and London on the 25th.

CHAPTER SIXTEEN

A LONG REST AND A CURE FOR ACUTE NEURASTHENIA

IT was at Torquay that the insidious after-effects of nervous strain began to show themselves from behind their ambush. Every civil engineer knows what that means. You can stretch a bar of steel by pulling at both ends, *up to a certain point*; release the pull and the elongation of the bar will shrink back to normal. Stretch the bar beyond that point, release the pull, and the bar will remain stretched *for ever*. This is called 'exceeding the limit of elasticity', and I was soon to realize that it was dangerously near in my own case. All modern doctors recognize the symptoms of this and have no difficulty in prescribing the cure, providing only that the heart and lungs are functionally sound and the mind not deranged: there was only one remedy: rest and *re-creation* in its true sense.

'Go to Churston,' said my doctor in Torquay, 'the air there is more bracing than here. Join the golf club and start by putting with several balls on each green until your hands are steady and have the feel of the club for every putt. Then take your mashie and approach from various distances. See how many times you can hole out in three, and give yourself a handicap against bogey.' (My course handicap had been about fourteen.) 'Get out every day, rest when you feel like it, walk a few miles every evening. Eat only simple, once-cooked food. Get the peace of the country into your veins, and forget all about Cochin as far as you can. Medicine? None at all, for preference, but come and see me again in a month or so. After all, you are still only forty-eight years old, and nature herself will look after you if you give her a chance. When you feel mentally restless do a crossword or, if you must work, design an ideal home for two or three people like yourself.' 'H'm . . .' I thought, 'moderation in all things; all the rest is embroidery.'

Having been advised to go abroad for the winter, we chose a

route new to us, and on 5th October left Tilbury by the night boat to Dunkerque. We landed early at the station platform and arrived in Paris at ten o'clock after a very comfortable journey. On the 8th we left for Lyons and stayed at the Carlton Hotel for the night. Here we found the highest degree of excellence—in courtesy, in waiting, in food and accommodation, that we had (or have) ever known. We arrived rather late, and as we were debating whether to change for dinner or not (feeling tired and grubby) the floor waiter wheeled in a carrier with all the essentials of a delightful cold supper, a bottle of excellent Chambertin, the apparatus for distilling the coffee, and a bottle of Cognac. He then put out our pyjamas and dressing-gowns, started the bath running in the room opening out of our bedroom, bowed courteously, and departed.

We did not dress for dinner that night: we undressed, and gave thanks.

From Lyons we passed on to Marseilles and thence by a roundabout route to Nice, where we stayed until 12th March 1930. Whenever the word Nice is mentioned my memory recalls a picture so full of colour and incident, so restful in composition, so varied in detail that, like a good painting, one never tires of gazing at it.

At first I rigorously excluded Cochin from my thoughts, but after a while I began to ponder during my evening walks over the planning of the last stage of the Cochin harbour works; the siting of the two long bridges, the deep wharves, the railway stations and marshalling yards, the warehouses and transit sheds, the administrative offices, and residences, the areas for naval and military buildings if war broke out again, as I was certain it would. A site should also be ear-marked for an aerodrome. The water supply and sewage disposal needed much thought and a hundred relevant matters, including possible backwater sites for the naval aircraft. I made no attempt to design details. It was enough to conceive a picture of the completed result, or so much of it that present needs, say for ten years, would be met at once, and the right areas allocated for future development over the next forty years. Further than this I could not see.

During this long spell of idleness I returned to London on 22nd February in order to pass my medical examination and book our passages back to India, where I was due by 1st April. To my

astonishment I failed to pass the doctor and was told that a further six months' absence was necessary. I begged for an explanation and was informed, in effect, that I had had acute neurasthenia and was not yet well by any means. I pleaded for three months' extension only, for I really did not feel ill, and he agreed reluctantly. He was a Scot and cautious: 'Repor-r-t in three months,' he said, and wrote something on the file. While I was re-dressing in an off-room with the door half open a fine, virile man strode in and stripped. After listening and tapping and looking at his firm, hard flesh, fine colour, and strong hair, the doctor said: 'Ach! Be awa' with ye: ye're juist bur-r-sting with rude health.' That is exactly how he looked, and for the first time I realized how far I must have fallen short of an 'A 1 plus' standard, even though I was perhaps twenty years older.

My next 'medical' was due towards the end of May, and after two weeks or so in Paris we spent two months visiting relations in town and country and renewing our happiest days in Churston. On 13th May I went up to London to be re-examined, confident that I should be able to leave for India soon, but again I was turned down—this time, I think, by a different M.O. 'Another three months,' was the verdict; 'your file shows evidence of a very severe strain on your whole nervous system. You must be a hundred per cent fit before we let you go. You may feel quite fit *here*, but you ought to know that India is not Churston. If you went back now you might be invalidated out altogether in another year. Don't you realize that?' I went away thoroughly chastened, if not depressed, and my spirits were not raised a few weeks later when the Government of Madras informed me that these further 'three months' extensions' were approved, but only as 'leave without pay'. That meant an overdraft with a possibility of retirement at the end of three months, and as a last resource we packed up and went to Harrogate for special treatment. Only recently had we been informed that there was a most experienced physician there who would shortly retire but would undoubtedly prescribe the necessary treatment for us at the Baths. And so it proved. Both my wife and I submitted ourselves to his care.

The Spa had an excellent staff. I was given, first, almost scalding hot sulphur foam baths, and then hot Vichy douche massage followed by cold water shot at me with the force of a fire-hose. This went on two or three times a week for six weeks or so,

during which I had to 'drink the waters'—most offensively sulphurous—and, very pleasantly, the aerated Kissengen while listening to the orchestral concerts in the building after resting in blankets and re-dressing. My wife, who had developed a spot of shoulder neuritis in Nice, was given the Vichy douche massage and diathermal treatment, a course which cured her completely and finally.

On 31st August we left Harrogate, and to my intense relief, the M.O. at the India Office gave me a clean bill. 'What *did* you do?' he said. I told him; he was greatly interested and made a few notes, observing that he had had his doubts about me, but that the heart and nervous system were now cured, and I could look forward to another ten years in India if need be. Greatly elated, I made immediate arrangements, and on Friday 11th September we left Tilbury in the P. and O. *Kaiser-i-Hind*, in which to suffer a very hot and humid journey with a following wind most of the way to Bombay which we reached on 3rd October, and thence by train to Madras on the 4th and Cochin on the 6th. Here my deputy met me, handed over, and went on a good spell of leave himself after a hard bat of three years on a very sticky wicket from 1927 to 1930.

PART THREE

THE FOURTH-STAGE PRELIMINARIES



CHAPTER SEVENTEEN

THE BEGINNING OF THE BATTLE

Conferences and Rivalries. Schemes and Schemers

THE dramatic success of the third-stage works and the constant use of the harbour by ocean-going ships during the monsoon weather of 1928–30 focused new light on the reasons for the many objectors and influences working against us during the period 1920–8. A leading member of the United Planters Association visiting the site on my return in 1930, and looking around on the ships in stream and the far extent of the new reclamation, now well advanced, exclaimed with the greatest astonishment and conviction, ‘*By God*, you have done it, Bris-tow! And with the *whole world* against you!’ And he was right. It was indeed ‘*by God*’ that we had done what we had done, and all my Indian staff believed it. And it was in this spirit and this faith, and the light of greater knowledge and experience, that we made it our first business to review very carefully every possible objection likely to arise over the fourth-stage development by the four Governments concerned, and any other authority or group of interests concerned, and so plan our steps and proposals accordingly.

As I proceeded to gather up the threads of these various interests, first in their individual preferences and the reasons for them, and second in their relation with each other and the secondary complications which might arise in open debate or behind the scenes, I was again reminded of my staff work at the Admiralty in 1917–20, and blessed my good fortune in coming to India with that solid experience behind me. No proper idea can be formed of the immense political and administrative difficulties which now confronted us without recording in some detail the forces engaged and how the port objectives were finally gained. These were the forces:

First Group: Governments. The interest of the Government of India in Cochin lay first in its guarding of the Imperial Customs

revenue. The four-party agreement of 1925, it will be remembered, stipulated that when it became the regular practice for ocean-going ships to enter the harbour and moor in the stream, the total customs dues received by the Governments of India and Travancore at all ports on the backwater area, with minor exceptions and deductions, would be pooled and divided equally between the three Governments of India, Cochin, and Travancore. (Madras, being a provincial Government, was not concerned with Imperial Customs.) This entailed loss to both the Governments of India and Cochin because they had previously divided the customs receipts equally; but whereas Cochin stood to gain by the possible diversion of dutiable cargo from other wholly British ports such as Madras and Calicut, the Government of India would lose still more, because instead of taking *all* the Imperial dues on this diverted traffic it would now get only one third. On the other hand, the existence of Cochin on the main ocean route undoubtedly provided a base of defence against enemy action in time of war, and the potential value of this asset might be very high, if not crucially important. Moreover, the Government of India had also to consider the possible industrial expansion in both Cochin and Travancore whereby entirely new customs revenue would be brought into the pool. It seemed, therefore, that on the whole the Government of India would not be against the further advancement of Cochin unless the estimated loss of customs revenue appeared really serious. An estimate of this possible nett loss was consequently prepared in my office and held in readiness. It did not seem serious at the time, but assumed startling proportions later.

Government of Madras. This Government had fathered the project and looked forward to its economic justification. As we have seen, and as early as 1920, it had been agreed that a good port at Cochin would stimulate industrial activity, provide an overflow to the busy port of Colombo, and perhaps bring passenger traffic and mails direct to the Presidency from Europe and elsewhere. It would also be useful for naval and air bases. Moreover, the harbour at Madras itself was small, artificially enclosed from the sea, subject to a heavy ground-swell in storms and from far-distant cyclones, and not happily placed across the beach, thus obstructing a strong littoral drift northward. This drift was known to be a recurring danger. It caused accretion on the beach on the

south side of the harbour, and erosion on the north side; while the harbour itself was liable to silt up during the process. The Chief Engineer in a written paper had referred to Madras Harbour as 'a slap in the face of Nature', or some such words. So that what the Madras Government foresaw so plainly was not a financial issue but one of jurisdiction. They could not understand how a port such as Cochin, with equally essential parts situated in different territories, could be governed by two different Governments; and, assuming that a statutory Port Trust were created, which of the Governments, they asked, would create it? If it were created by both, would the port then have to deal with both, so far as matters in the territories of each were concerned? And in the event of matters which concerned both, which would have the last word? Again: would there be two police and customs authorities, two authorities imposing different income taxes, two railway authorities, etc.? The Madras Government could see no solution of the problem except by the cession to the (then) British India of civil and criminal jurisdiction over the whole port area.

The Cochin Government could and would not agree to cession, but thought that a way out might be found by bringing all its own laws into conformity with the British codes, and by creating some form of port authority, not necessarily with statutory powers, but which could yet operate in a practical way under the sanction of both Governments. This difficulty of jurisdiction, which had been more or less apparent from the start, now became pressing. Much had changed since 1920. Indian politicians generally were being given more power. The Cochin Maharajah was convinced that he could and should not yield any of his territory, nor exchange it for other parts of (British) India, and in this he undoubtedly reflected the opinion of his subjects as a whole, though there were a few far-seeing Indian lawyers who thought otherwise.

In making my contribution to the solution of this problem I requested the office staff first to study the British and Indian codes and extract all the laws bearing on port affairs, and second to search all the records in Madras of cases taken to the Courts arising out of these laws. From a study of a very capable report by my office manager it seemed to me that some patched-up compromise might be evolved whereby jurisdiction might be ceded

only in respect of a small portion of the total law of the State; but though my final report was useful and instructive in many ways, the suggestion was declared impossible by the Diwan of Cochin¹ on the ground that law is one and indivisible, in which opinion he was supported by the Law Member of the Madras Government.² While perforce accepting this, it was not understood why, if Cochin were willing to bring *all* its laws into force with those of British India, the cession of a part of them for a specific purpose and in a specific area would have proved impracticable, especially if a new Act were passed to cover, in a few clauses, possible chances of breakdown. However, both sides were legally convinced that no such compromise was practicable, and it looked as if the question of divided jurisdiction would be a bar to progress comparable with the old sand-bar which had blocked entrance to the harbour itself.

Cochin State. Apart from the above, Cochin was in no two minds as to the effect of the completed harbour on the fortunes of the State. Cochin, though physically in a 'backwater', was one of the most literate States in India, and more so than in any part of British India. Its Government, on the whole, was progressive, stable, and benevolent. Its population was growing very rapidly and looking for new outlets. It was not a rich State, and it believed that the port would help its finances by bringing more trade to the State, possibly from new sources, and possibly by the creation of more industries in Cochin which would be stimulated by the proximity of a first-class harbour and improved communications. Yet Cochin State was not merely out to take. It was willing to rebuild the old railway, to contribute towards new ones, to advance the cost of the reclamation, and to contribute its share towards any new harbour works. For a small State, not over-blessed with riches, Cochin ventured a good deal, and it is not surprising that its Ruler resisted the cession of jurisdiction over an area which was prized so highly and formed so great an asset economically.

Travancore. The position of Travancore was also a difficult one. When the four-party agreement was signed in 1925 the State undoubtedly realized that there might have to be a certain diversion of traffic to the Cochin harbour, and in due course there were

¹ Mr., now Sir Charles, Herbert, K.C.I.E., C.S.I., I.C.S.

² The Hon. Sir T. Krishnan Nair.

diversions. Nevertheless, the merchants and others at the neighbouring states of Alleppey and Quilon strongly resisted the export and import of any Travancore cargo via Cochin and instead became more active competitors, so that there arose the anomalous position of a rival mercantile community opposing Cochin while the State itself was making contributions to its further development and receiving one third of the Customs Revenue from the pool.

It was clear that the State was in a difficult position and that while it became necessary to contribute to the fourth-stage works at Cochin (on being assured of its share of the customs revenue), it would have to consider the scope of the developments in the light of their reaction on its own mercantile community in Travancore. My suggestion, made informally at this stage, was either that the port of Alleppey, which was forty miles south of Cochin by backwater, should be converted into a river port, with a lighterage transport to Cochin instead of using its own open roadstead and useful, but shifting, mud-bank, or that Travancore should retire from the agreement—a course which the late Resident¹ had informed me would not have been unacceptable to Travancore a few years before.

The Madras Government, however, were of opinion that it was better to have Travancore as a working partner, hoping that time would bring a natural solution. It was admitted, nevertheless, that there was no apparent enthusiasm in any part of Travancore for the development of Cochin port. The old State rivalries and prejudices had not entirely died away; personal prestige still counted for much, and Travancore was five times as big as Cochin and much richer in natural resources. The idea that Cochin State, merely because of its geographical position, and depending almost entirely on the hinterland of British India and Travancore for the commercial existence of the port, should seek to dominate it, or even to take a major share in its control, was questioned in many quarters, both in Travancore and elsewhere. Moreover, Cochin covered only about one twenty-fifth of the total hinterland serving and being served by the port, that is, assuming the future construction of proper road and rail connexions.

Second Group. Here, surely, were difficulties enough to perplex anyone, but there were four other authorities affected who were

¹ Mr. Charles Cotton, I.C.S.

in more or less degree under the control either of the Governments of India or Madras: the South Indian Railway, the Madras and Southern Mahratta Railway, the Madras Port Trust, and the Royal Indian Navy, Bombay. The South Indian Railway Company operated its own system, though over ninety per cent of the shares were held by the Government of India. There was a Board of Directors in London, composed largely of retired railway officers from India. The Board's agent in South India carried out the general policy of his Board, but with proper regard to the views of the Railway Board in the Government of India, a strongly entrenched Department with general control over railways as a whole and particularly over the Government-owned systems. The Government of India had invested over seven hundred million pounds in railways and were chiefly concerned in seeing that this produced sufficient revenue to cover capital and working charges. There was competition between the railways and ports for coastwise traffic, in which the dice were loaded against the ports from the start, because the ports, as such, had no Board in New Delhi or Simla to put their point of view to the Ministers concerned when the interests of ports and railways were opposed, as they frequently were.

The aim of the South Indian Railway Company, naturally, was to secure a maximum ton-mileage of goods traffic with a minimum expenditure on capital and maintenance costs. Before Cochin was opened, goods travelled from many places on *west-coast* zones to *east-coast* ports, thus securing a relatively high ton-mileage. Better railway connexions to Cochin would bring a greatly reduced ton-mileage. Why, therefore, pay for new lines to reduce ton-mileage? The problem was accentuated at Cochin because the line (sixty-two miles long) which connected the port to the South Indian Railway system belonged to the Cochin State, and this, though worked by the South Indian Railway, gave the Company only one-fifth of the profits. Unfortunately, therefore, the future of Cochin was threatened at the start by lack of willing co-operation on the part of the railway company, whose opposition was quickly sensed. This led to a provision in the design for motor-lorry traffic, and later, to an examination of the facilities offered by the canal routes, and their possible extension.

The Madras and Southern Mahratta Railway Company joined the South Indian Railway at Jalarpet, a town west of Madras. It

was affected in two ways: first by the loss of haulage on that proportion of hinterland traffic which would now be handled at Cochin instead of at Madras, and second, by the possible loss of much ocean-passenger traffic to and from Bombay and Madras, for Cochin port would certainly provide a more direct outlet for South India as a whole. This regular seasonal and other overseas traffic was considerable, and the South Indian Railway Company likewise stood to lose that part of it going to and coming from Colombo, although in their case this loss would be partly offset by the same traffic passing through Cochin. The Madras and Southern Mahratta Company were about to consider the harbour development of Goa (in Portuguese India), a western terminal to their line, but whether for purely local reasons or in opposition to Cochin is not known. At any rate the development took place, and actually preceded that at Cochin.

The reaction of the Port of Madras to Cochin has already been outlined. Previously, Madras had handled most of the oils imported into South India. A new major port at Cochin obviously foreshadowed a great increase in oil imports for west-coast consumption, and also a diversion of other Madras hinterland traffic to or from points nearer the west coast. Madras Port finance was not very flourishing, and the port really could not afford to lose new or old traffic diverted to Cochin, nor could it face heavier harbour dues for fear of losing still more traffic. Moreover, additional capital expenditure had become necessary to deal with the menace of sand travel. The opposition of Madras and its merchants was well-founded from the point of view of self-preservation, but there could be no possible comparison between the two harbours from any other point of view, and the measure of the opposition was a measure of the apprehension felt in business and port circles because of Cochin's superiority in position, area, and natural advantages as a calm haven all the year round.

The Royal Indian Marine (later to become the Royal Indian Navy), together with the East Indian Squadron of the Royal Navy, had been keenly interested in Cochin from 1920 onwards. In 1921 a prominent British Admiral had stated that Cochin would probably be used by the Navy in war-time, and as a result of this I made enquiries at the Admiralty in 1924, and again later, as to what class of vessel would be based on Cochin, so that in making

plans for the future the necessary space could be reserved for a dry dock.

In due course the Admiralty provided dimensions of the dock regarded as suitable, but it was clear that neither then nor at any time up to 1941, when I retired, were the Admiralty prepared to consider making a contribution towards the cost of a large dock, and the Port could not afford to risk large capital as a business speculation. It was felt at Cochin, not without reason, that if Cochin Port were to be used as a war base and space allotted for war purposes, the participation by the Home Government in its finance was a reasonable corollary. That other countries were interested in Cochin from the same standpoint was apparent in January 1931 when Germany sent her new *Emden* on a long training cruise for cadets, and selected Cochin as an early port of call. The *Emden*'s hospitality was unbounded and the relations on all sides quite cordial, largely, I think, because the Captain had been the Torpedo Lieutenant in the old *Emden*, one of the very few German ships with a clean record in the 1914-18 war, but I could not help noticing that a prior copy of my paper on the dredging at Cochin (read before the Institution of Civil Engineers in 1930) had mysteriously disappeared from the cabin of my launch after a tour of inspection made by some of the German officers at my invitation.

The position therefore appeared to be that while the Admiralty and the Royal Indian Marine were supporters of the Cochin project, they had no intention of contributing anything towards its cost, which, in the long run, would thus have to be borne entirely by the trade of the port. This fact had an important bearing on the further proposals. I thought then, and still think, that the importance of Cochin on the Far Eastern route, and its unparalleled resources as a base for cruisers, aeroplanes, and seaplanes, should have been realized and accepted from the start. A moderate contribution by the Home Government towards the cost of the harbour might have tipped the scale on the jurisdiction question; but it was only too clear from enquiries made in London that there would be no prospect of an Admiralty contribution.

Such, in brief outline, were the factors in the problem as it affected Governments and authorities controlled by Governments, but closer at hand, and more immediately urgent, were others which the merchants began to consider with increasing

apprehension. Their point of view, expressed in many friendly conversations and written notes, was in the main as follows, starting from a letter written in 1929. The writer of this said, in effect, that with the remarkable success achieved, the essential work had been done, and that it would 'ruin everything' to proceed any further with the final project for a modern port. However, as it was hardly within my power to cancel signed agreements made between four Governments, I proceeded to design the 'modern port' pending any instructions to the contrary.

The Chamber of Commerce at Cochin amplified the general trend of this private letter in these terms:

It is true that we were a party to the decisions of the *ad hoc* committee in 1920 and that our representative on the Port Conservancy Board signed the four-party agreement in 1925. We agree that these documents contemplate the conversion of the new harbour into a first class modern port, but we think the time for this conversion is not ripe, and we doubt if it is economically justifiable because it will not bring enough new traffic to pay for itself, and we are against any raising of the harbour dues for this purpose. It is true also that we have agreed on various occasions that the port will stand a landing and shipping charge of one and a half, or even two rupees per ton, but things have slumped heavily since then, and now we think that the problem should be reviewed in the light of present facts and not past agreements.

In other quarters this opinion was explained further. A railway officer put the case with brutal frankness. 'The fact is,' he said, 'your harbour is in some ways a bit of a bombshell. Few, if any, thought it would succeed, and now we have to consider the short-circuiting of our goods and passenger traffic, and the merchants stand to lose lighterage to and from ship according to the extent that you build wharves. You will say: Government is building for posterity; and we ask what has posterity done for us? Men don't come to India for their health, but to earn a living. It's all bunk about merchants desiring not to raise the dues: the merchants will agree at once provided that *you* don't build wharves and *they* handle all the traffic. Or, if you give them an honorarium of say eight annas a ton for everything that goes direct over a new deep-water wharf, they might agree then.'

'But that,' I replied, 'was all fought out in 1920 when we sat

together on the *ad hoc* Committee, and they have since agreed to the scheme as a whole.'

'True: but business is business; ten years have passed. They can plead that times have changed. They won't give up anything without a fight, and neither will we. If Government think that the harbour is essential for national purposes let them pay for it and compensate us for loss of ton-mileage.'

'H'm, what would the other ports of India say to that?'

'Exactly; but meanwhile it's an ordinary business deal and you must face legitimate business opposition; and, by Gad, you'll get it all right!'

Finally, from the official point of view the policy to be adopted was clear enough. The four Governments had agreed to undertake a big project which they believed would have local and national significance. As their local representative, they would expect me to formulate proposals by which this end could be attained without committing Governments to any kind of outlay not contemplated in the four-party agreement. Once again, therefore, I decided to take the bull by the horns and ask the Madras Government to set up in due course a conference at which every interest would be represented in order to consider proposals to be submitted by me shortly for the furtherance of the scheme.

CHAPTER EIGHTEEN

CONCEPTIONS AND INFLUENCES

Designs and Estimates. Social environments and Agreements

As I had already realized during my sick leave in Nice, the design of the 'fourth-stage' proposals and the financial planning proved an intensely interesting problem. It was obvious at the outset that there would have to be a long-range and a short-range view, and that the short-range should develop into the long-range without waste or radical alteration. This meant the design of a combined township and port on the new reclamation plus the contiguous island of Venduruthy, measuring together about 1,350 acres.

The first stage of this problem lay in the estimation of the amount of goods ever likely to be handled, and there is nothing more difficult. Some ports grow steadily, others rapidly. Some decline owing to economic changes, and some achieve success through entirely unexpected causes, such as the discovery of oil or minerals. It was impossible for anyone to say what might or might not happen in the future, and the only course open was to estimate on the basis of experience at other places.

Thus, from the records available we could trace the progress of sixteen ports from the time that deep water and wharves had been provided, and plot a curve showing their rate of growth (or decline) over a period of thirty or forty years. From these curves—all that were in the records—an *average* curve could be derived which represented not unfairly what had happened in Europe, America, and India. Allowing a good margin on the cautious side, for the growth revealed was surprisingly high, it seemed safe to assume that the total trade would not be more than five million 'goods' tons per annum and that, of these, one million might be handled elsewhere at British Cochin and Muttancherry. As the then trade of the whole of the Madras Presidency was only about three million tons, this assumed figure seemed high enough; but,

on the other hand, Bombay already handled six million tons, Calcutta eight millions, and Karachi about two millions.

With this basic figure of four million tons to be handled on the reclamation (including a possible overflow to Venduruthy Island) we could estimate the total length of wharf frontage ultimately required, for there are known rules for this calculation according to the nature of traffic handled. This frontage, we found, could be made. Pursuing similar tactics, and measuring the areas of broad and metre-gauge railway sidings at a large number of ports all over the world, it was found that a rough average came to fifty acres of 'mixed' sidings per million tons per year of traffic, so that the total area required on the reclamation and Venduruthy would be two hundred acres, part for broad- and part for metre-gauge. This also could be provided. Admittedly speculative and approximate, I could think of no other way of estimating these basic figures. To me they seemed all the more reasonable because they did include the coefficient of the unknown and unexpected based on actual results over a large number of ports.

Yet it was remarkable to note how this 'long-range' conception appeared to be misunderstood. One group said that the Harbour Engineer was relying on an increase of traffic of four million tons to justify his proposals. Another group said that the graphs taken from other ports had been 'specially selected' and were not a fair basis. Yet another, referring to the railways, asked how the traffic was to be conveyed over the existing system, and this in spite of the fact that the plans and accompanying reports made it clear that the whole design was dependent on new roads and broad and metre-gauge connexions being brought across a new bridge to the quayside.

Having focused an approximate long-range view, it was not difficult to fill in the short-range. A central point for the first part of the wharves and the railway station was selected, with metre-gauge connexions extending northwards and broad-gauge southwards, thus dividing the long frontage into two separate areas. The main idea was (a) to handle bulk cargoes by crane straight on to the ship, and vice versa, direct into lorries or rail-wagons; (b) to avoid having a 'mixed' gauge (two lines on the same sleepers); (c) to facilitate operations on the assembly sidings. Later on, as will be seen, this railway system was modified at the suggestion of an Advisory Committee in London. The scheme

provided for a first instalment of four berths occupying two thousand feet of wharf space and sufficient transit shed and warehouse accommodation for at least five hundred thousand tons of goods per annum. The scheme included the construction of a combined road and rail bridge to the mainland and a separate road bridge to Muttancherry, together with roads, building, new workshops, and all auxiliary works. The cost was estimated at approximately 150 lakhs of rupees (£1,125,000, with the rupee at one and sixpence).

Such, in broad outline, was the first draft of the new proposals. It was based on a long-range view of forty years and a short-range view of ten years. It would have the effect of establishing a landlocked and deep-water harbour suitable for mooring any vessel passing through the Suez Canal, of putting vessels alongside a wharf, and of handling passengers or cargo direct into or out of broad or metre gauge trains; of providing fuel and water and sites for naval and air bases; of stimulating the interior development of the west coast, and of strengthening the Empire defences. It could be built on a business basis yielding three and a half per cent interest over forty years and without raising the dues to such a figure as would seriously threaten its trade.

A large portfolio of plans and charts accompanied the report. Besides giving all the data for the long-range view and plans of all the railway sidings at other ports, the portfolio included the designs for the various works—bridges, railways, roads, wharves, buildings, etc.—a large plan of the hinterland showing the acres under cultivation for tea, rubber, and coffee, with graphs depicting the growing output of the same; a plan illustrating the distribution of trade at all ports in the Madras Presidency; a plan of sea and air routes, another of inland communications and the vast backwater system, and yet another comparing the harbour areas of Cochin with those of Madras, Bombay, Rangoon, Calcutta, and Colombo. Finally, two models were prepared in the workshops, one showing the ultimate lay-out and the other the immediate proposals. The Madras Government called the first conference for July 1931, the preparatory work having taken less than a year to complete.

Socially, it was a very interesting and somewhat unusual position for my wife and me. In all the long arguments and sharp differences of opinion there was no personal ill-feeling on either

side, each party appreciating and, to a certain extent, sympathizing with the other point of view. The years 1930, 1931, and 1932, when the controversy was at its height, were in fact some of the happiest we had spent in India, with the office working hard on creative work by day, and with frequent bridge and musical parties in British Cochin by night, where the harbour adversaries foregathered with their wives in an atmosphere of quite sincere goodwill. The informal 'Cochin Musical Association', which came into being at this time, with its pianoforte and string trio, its good voices—one of them excellent—and its individual pianists, its friendly dinners and *al fresco* suppers in the gardens, made life very pleasant indeed.

Moreover, we had realized that we ought to extend our acquaintanceship with the Indians on the mainland of the State at Ernakulam and elsewhere. Two or three Indian gentlemen had conceived the notion of forming what would be the first club in India open to Europeans and Indians, to both sexes, and to all castes and creeds, and their children. Mr. Padmanabha Menon, member of an old Nair family, was, I think, the founder and became the first secretary; by unanimous desire on the part of the Indian members, male and female, my wife became President, and, again by unanimous desire, retained that post until 1941, when my retirement from India compelled her resignation.

It was called the 'Lotus Club' and constituted a very bold advance, for the strictly orthodox Indians were shocked at the idea of mixing up people with age-long differences of habit and outlook in such a free-and-easy way. From first to last, however, the Club filled a growing need and maintained a tradition of friendly informality; it played its games and had its set debates as well as its more humorous and spontaneous arguments. It subscribed for and built itself a new club-house, including tennis and Badminton courts, with a paternal Cochin Government in unobtrusive but genuine sympathy with the movement. When His Excellency the Viceroy (Lord Linlithgow) visited the Club in 1939 and played tennis with its Indian members, there was a general feeling on all sides that not the least among the forces working for Cochin was the quiet and steady influence of the Lotus Club, and even the diehards and sceptics began to think again.

Ernakulam, in fact, was little known to us before the advent

Sir Robert Bristow, C.I.E. Taken three years after his retirement



Lady Bristow, first President of the Lotus Club, Ernakulam, and Divisional Commissioner of Girl Guides, Cochin State. Taken four years before retirement from India





Captain H. G. Fletcher
Port Officer



A. G. Milne, C.I.E.
Executive Engineer, 1927-41
Chief Engineer, 1941-7



B. D. Erani
Chief Engineer, *Lady Willingdon*, and
later Mechanical Superintendent



D. Lamont, M.B.E.
Mechanical Superintendent (Retd.)

THE FOURTH-STAGE PRELIMINARIES

of this Club—known, that is, with the knowledge that comes of social intimacy and not from casual conversations during a banquet or garden party. The Indians of Ernakulam who belonged to the Club came from professional classes such as lawyers, doctors, and civil servants; some belonged, or were closely related to, the Cochin Royal Family. Several had been partly educated or trained in England; others had rarely left their own countryside. Mrs. A. N. Menon, a little Nair lady who became Secretary in 1938, had the honour of introducing, in one glorious year of life, the Viceroy to the Club, an Act of Parliament to the Cochin Assembly, and a (third) baby into the home circle. The Act was passed, too, and in spite of great orthodox opposition, for it raised the marriageable age of girls from about twelve to sixteen years, I think.

Further, my wife was invited to take over from two friends the formation of a corps of Malabar Girl Guides, and this, socially, was an even greater and more daring innovation than the Lotus Club. Starting from an existing nucleus of a few Anglo-Indians, it grew year by year until it included Europeans, Anglo-Indians, Nairs, Muhammadans, Roman and Syrian Catholics, Protestants, Hindus, Brahmins and non-Brahmins, Jewesses—in fact every child who with her parents' consent wished to join. It had the support of the Cochin Maharajah and the Maharani, the State, the convents, the colleges, the schools of all classes, and it spread to other centres, so that the membership in a few years numbered over a thousand.

The movement, in my judgement—and I do not think I was prejudiced—was a striking example of how Indian children of all classes can be brought together under the right leader, taught the same fundamental rules, the same games, share the same expeditions, contribute their own personal gifts of character and ability, and find sincere affection for each other. Some of their literary efforts were certainly original, and afforded us a good deal of pleasure, not unmixed with amusement. On one occasion H.M.S. *Effingham* came into the port, and the Captain's permission was asked to the gathering of a party of Guides on board with my wife in charge of them.

Permission was readily given and a time fixed, but in their eagerness the girls arrived much too soon and waited disconsolately, looking over the ship's side, until my wife arrived, when

all was well again, and an excited crowd were taken round by sailors and others to various parts of the ship. (Actually, the girls were interested mostly in the kitchens!) I had offered a prize for the best essay on their visit, and on looking these over I came to one which included this passage: 'So we had to wait and were very sad until we saw a launch arrive and the stern and awful countenance of our beloved Commissioner coming up the ladder when we were all happy again.' The fact was that my wife had come ten minutes early herself in order to meet them when they came on board, and, being responsible for them, was feeling somewhat disturbed to find them already there. I gave this child a prize 'for originality of phrasing' and another to the real winner.

On their first visit to Cochin in 1933 after returning to India as Viceroy and Vicereine, their Excellencies Lord and Lady Willingdon made a special point of attending a rally of these Guides in the grounds of the British Residency. They were extremely interested in the extraordinary mixture of races and religions, and entered into the spirit of the gathering with all their old charm. The mass performance by nearly six hundred Girl Guides of old Malabar folk-dances reflected great credit on themselves and the Guide Trainers and others who had taught them.

Looking back twenty-six years, I am quite sure that the influence of this movement became linked with the fortunes of the port, for there was hardly a family or a school, convent or church, or welfare institution in the Indian centres where my wife was not known and respected as the 'Harbour Lady' or 'Auntie Harbour'.

The series of conferences which started in 1931 and continued until 1935 must surely be regarded as unique in port history. The Madras Government held three within the years 1931-3 and the Government of India three more in 1934 and 1935. The minutes of all these meetings are not available, but the difficulty of finding an agreed settlement will be obvious from what has been written in the last chapter. Briefly, the progress of affairs in Madras ran on these lines:

- (1) In 1931. Agreement was reached on the principle of the proposals, but the scheme should be recast, providing two

THE FOURTH-STAGE PERLIMINARIES

berths for broad-gauge traffic and omitting the metre-gauge wharf for the present.

(2) In 1932. The amended scheme was approved together with an estimate of 93 lakhs of rupees. Failure to reach agreement on the subject of jurisdiction was recorded. Proposals were sent to the Government of India for approval pending settlement on the jurisdiction question. Meanwhile I was sent to England to obtain the concurrence of an Advisory Committee to the general lay-out of site, to the design of bridges, wharf, and other works.

(3) In 1933. The Advisory Committee's report was received and adopted; various related matters were discussed. Still there was no agreement on the question of jurisdiction. No reply had yet been received from the Government of India.

The parties concerned in the proceedings of these conferences included:

(1) Chairman: Law Member, Government of Madras. Finance Minister, and Secretary Finance-Marine, British Residents in Cochin and Travancore. The Advocate General, Diwans of Travancore and Cochin with their chiefs of staff, representatives of the Cochin and Travancore Chambers of Commerce. The Agent to the South Indian Railway, the Presidency Port Officer, and others.

(2) As above except that the Chambers of Commerce were not represented. The Chief Collector of Customs and Chief Commissioner of Police were more in evidence at this meeting on the subject of jurisdiction.

(3) Very largely as in (2).

At the first conference the discussions were largely concerned with the principle of converting the harbour into a modern port. I gave an account of the proposals as already submitted to the various parties. The two Chambers and the South Indian Railway Company raised their usual objections. The other parties gave their opinions from time to time in order to bring out special points of view. Finally the Madras Government (with my concurrence) accepted a proposal from the Cochin Chamber of Commerce whereby the *immediate* development would be limited to a two-berth instead of a four-berth scheme, largely because this

admitted the principle of further development; and, in any case, there now appeared to be no prospect of obtaining the metre-gauge railway connexion for some years to come.

Accordingly, I then prepared an amended plan and estimates, which were both accepted at the second conference, and on 11th November 1932 I left Bombay for England in order to obtain the views of the old (1924) Advisory Committee, all of whom were still available. The three Governments concerned wished to be satisfied on four main points: first, was the lay-out generally in order; second, was the railway system the best that could be designed; third and fourth, were the designs for bridges and wharves satisfactory?

Briefly, the Committee replied that the lay-out was in order; that the railway system, with two areas and wharves for broad- and metre-gauge traffic, should be changed to a single broad-gauge system inside the wharf premises, but with transfer platforms at the assembly sidings outside, where goods could quickly be changed from one gauge to the other; that the bridges should be built as in the first alternative shown on the drawings, namely, with cast-iron cylinder supports and steel girders for the super-structure, and that the wharf design should be changed from a ferro-concrete (and original) design, as proposed by me, to a more conventional type of sheet piling tied back to a suitable anchorage on shore.

I was not entirely satisfied with the findings of the Committee on this occasion, neither as to the railway system nor the wharf design, but accepted them in order to get an agreed report. It was far better not to raise technical issues at such a critical moment administratively. The meetings of the Committee were more informal than on the first occasion and no minutes were kept. It may be added that all three members died a few years later, to my great regret. They had been my sheet-anchor in England; unquestionably they had prevented the shelving of Cochin in 1924; and in spite of our differences on this occasion, their report was sufficiently corroboratory to inspire Government confidence on the broad issues. Another difficult corner had been turned, and at the third of the Madras Conferences in May 1933 there was little left for decision but the two great obstacles of jurisdiction and the division of customs dues, still under final consideration by the Government of India.

THE FOURTH-STAGE PRELIMINARIES

By this time I had been given permission to build a house on the new Reclamation, the first floor of which would be used for my own quarters and the ground floor for my head office. After so much touring and change of residence in the Presidency, it was not difficult to design a building admirably suited for the double purpose, and there we all settled down very happily and comfortably for the rest of my service in India.

CHAPTER NINETEEN

THE LAST STRAITS

More Conferences and Questions. Customs dues and Diagrams. Jurisdiction and Works and 'that Mud-bank'

A FULL year had passed after the last recorded Conference before the Government of India in May 1934 summoned the parties to Simla, where, from vague rumours reaching Madras, the Central Government had no intention of being rushed into a premature settlement. There were in fact four high-level conferences before complete agreement was reached in 1935. Naturally, therefore, a somewhat formidable host of opposing interests and experienced administrators assembled in the committee room under the chairmanship of Sir Joseph Bhore, K.C.S.I., K.C.I.E., C.B.E. There were present the Hon. Member for Commerce and practically all other Hon. Members of the Viceroy's Council and all the corresponding Members of the Madras, Cochin, and Travancore Governments, together with their secretaries and myself. In addition, a celebrated lawyer, Sir Tej Sapru, appeared on behalf of the Cochin State. It would be impossible for me, even if it were officially permitted, to write a full account of the discussions and other conversations which took place at these meetings. Together, they would probably fill a larger book than this, and it must suffice to bring out the salient points of the most important issues.

Briefly, the Government of India were of opinion that for them the outstanding questions were those of jurisdiction and Imperial Customs dues. If, however, the other Governments still desired to proceed, a further arrangement would have to be made as to the division of the Customs receipts. What sort of an arrangement? Well, bluntly, less Customs revenue for the Cochin and Travancore Governments, and more for the Government of India. So that was that, and all went home to think about it. True, there were many other discussions, formal and informal, bearing on the

subject of present urgency and jurisdiction, but it was clear to most of us that the Government of India, though it would not be rushed, might be willing to compromise over the problem of jurisdiction provided that they received the major share of the Imperial Customs dues; the issue therefore lay first in finding an acceptable basis for this redivision.

In my opinion the Central Government were perfectly justified. The original four-party agreement of 1925 had been framed at a time when there were no protective tariffs and when Cochin and Travancore could only look forward to a reasonable return from the 'pool' for their capital investments; actually, the annual receipts then would have yielded perhaps eight per cent on their outlay. However, with the increase of trade at Cochin, partly diverted from wholly British ports; with the vast increase in the total of the 'pool' by reason of the new protective tariffs; with the acceptance by the Cochin port of the principle of paying five per cent on further loans, there could be no possible excuse for paying out of the Imperial Customs receipts an annual sum which, in a few years, would have repaid the *whole* of the money subscribed by the two Governments. I was therefore asked informally by a senior member of the Government of India¹ to put up an appreciation of the 'customs problem' as it appeared to the Port, having regard to the possible increase of traffic over a number of years. And with this as the one solid gain from the Conference proceedings, I was personally satisfied.

However, it was not easy to write an appreciation of a position in which there were so many unknown factors. For example, there was the uncertainty of the tariff itself: would the existing protective rates continue, and if not, how would they change? Would new duties or higher ones be added—a tax on Burma rice or oil, for example? Again, what period ahead should the 'appreciation' cover? And, from the point of view of the two Indian States, if they were not to be granted one third of the 'pool', as previously agreed, what principle or principles should govern any other apportionment? Could they claim, for instance, that with any considerable growth of the port, amenities would have to be provided at Ernakulam or elsewhere which could only be paid for out of the Customs revenue—existing funds being insufficient? And yet again, what natural growth of the port

¹ Sir Jeremy Raisman, G.C.I.E., K.C.S.I.

might reasonably be expected, and in what commodities, (a) assuming a long period of peace, (b) a long interruption due to war? By no known rules, actuarial or otherwise, could such a combination of unknowns be resolved into any mathematical formula. It was clearly another case for building on a reasonable hypothesis.

So it was, therefore, that my headquarters staff and I settled down to the preparation of a dozen or so different schemes from which it would be for the Central Government and the two State Governments to agree upon one. The principles we adopted were these: first, to consider a period of twenty years from 1935 and a possible maximum of customs revenue at the end of that time; second, to substitute a maximum *limit* to the third share already agreed under the previous agreement; third, to add to this third share a 'bonus'—a small percentage of the dues as they might be imposed upon the old and new imports. Having reached this stage we set our drawing office to work, and there issued in quick time a portfolio of twelve diagrams, each showing graphically a different method of applying the three principles over a period of twenty years.

From the first this effort received very gratifying support, and my own suggestion as to the best compromise was finally adopted. To start with, it gave the States *not less* than they were already receiving, then a *maximum* figure of twenty-five per cent more, and after that a bonus according to total receipts. At the next (fourth) conference in Delhi, attended by all the parties concerned, this compromise was accepted, but after pressure by the two States the Government of India gave a fractional increase to the bonus percentages.

The settlement was largely due to diplomatic handling by the then British Resident (the late Lieutenant-Colonel Sir Donald Field, C.I.E.), who had at once taken the proposals and my covering report to the Government of India. Sir James Grigg, K.C.B., K.C.S.I., the then Finance Minister,¹ quickly grasped the principles involved, and appreciated the significance of the diagrams. Considering that this first meeting (at which I was not present) had begun apparently in an atmosphere of complete scepticism, and that the Resident had been wholly unsupported, it was a remarkable achievement, and on that day the darkest of the clouds threatening Cochin lifted and dispersed.

¹ Now the Rt. Hon. Sir James Grigg, P.C.

Greatly encouraged by this result, and with the assistance of my office manager, Rao Sahib Sambandam Mudaliyar, I started to work out, on another series of diagrams, the system of civil and criminal jurisdiction already in force both in Indian and British Cochin, the constitution and organization of a proposed Port Authority (with powers delegated by the two Governments), proposed improvements in the Cochin State Judiciary, and the machinery whereby Excise, Stamps, Income Tax, Police Supervision, and other factors of the administration would be adjusted. Courts were to function *ad hoc* in British or Indian Cochin, with final appeal to the Privy Council. This was acceptable in several quarters, at any rate as a basis for discussion, but the Madras Finance Department remained adamant in its request for a single jurisdiction vested in the British Government.

Meanwhile the wheel had turned full circle, and now Lord Willingdon, as the new Viceroy of India, began to influence the destiny of what he had rough-hewn as Governor of Madras. The question of jurisdiction still bothered everyone; many said that, after all, it would prove an *impasse*, but I had no doubt in my own mind that the Viceroy would soon find the right people to bring about an agreement on the problem. This, in fact, happened when he appointed, in consultation with the Maharajah, an Indian gentleman, Sir Shunmukham Chetty, K.C.I.E., as the new Diwan of Cochin. Sir Shunmukham had been President of the Indian Legislative Assembly, and shown great ability in that post both as a keen businessman with a legal training and as a politician. After a good deal of negotiation behind the scenes, a final conference was held at New Delhi at which the remaining difficulties were overcome. The Cochin State would retain jurisdiction over its part of the Port but would bring its laws into line with those of British India; the Madras Government would hand over the Port to the Government of India, who would transfer it to the class of major ports and take over the financial obligations of the provincial Government; a Port Trust Act would be drafted in due course, and meanwhile the Port would function under an Administrator appointed by the Government of India with the assistance of an Advisory Committee drawn from all proper sources. The funds for the fourth-stage works would be jointly subscribed by the Governments of India, Cochin, and Travancore. Reports from the Port would go direct from the Administrator

to the Government of India, who would give decisions after consultation with the Cochin and Travancore States as might be necessary or desirable.

Such, in brief, were the main decisions; they were to be incorporated in an Agreement which would also define explicitly the new principles for the division of Customs receipts. The decisions were not entirely comprehensive, but were of a kind which could obviously be accepted and made to work as an interim measure, from the experience of which a final settlement might perhaps be reached later on. Behind the settlement came first the Viceroy and Vicereine. In my considered opinion there would have been no interior harbour and no modern port at Cochin but for the constant and strong support of Lord and Lady Willingdon, whose complementary genius for the long-range and the short-range views was remarkable. This largely helped to make them what indeed they were: unique among the many Excellencies who have given life and fortune to the cause of India, in their case by devoted service at Bombay, Madras, and New Delhi, and a generous expenditure from their own private funds.

Meanwhile the reclamation area was being filled more rapidly than had been expected owing partly to the annual silting and partly to extensions of the dredging operations in the Muttan-cherry channel, the soil from which was all pumped into the area. The Viceroy, when visiting the port in 1933, agreed to the request of the Maharajah that the reclamation should now be named Willingdon Island, and in other ways showed his great interest in and approval of what had been done since 1920. It is interesting to recall the speeches made by His Highness and the Viceroy at this time.

The Maharajah (State Banquet, 8th December 1933):

I do not presume to pay His Excellency an idle compliment; nor do I in any way exaggerate the facts when I say that the development of Cochin Harbour, which is now progressing so satisfactorily, would never have been undertaken had it not been for His Excellency's energy and initiative.

The result of His Excellency's action we can all see to-day. It seems to me, therefore, a particularly happy omen for the future success of the port that His Excellency should again be honouring the State with a visit at a time when so much progress has been

THE FOURTH-STAGE PRELIMINARIES

made with works which are to convert Cochin into an important harbour.

His Excellency has already done so much that I shall lay myself open to a charge of ingratitude if I make any further request of him. But even at that risk there is one more favour which I should like to ask. I would ask him to allow me to call the reclamation, which will be the future centre of the harbour's activities, after his name, so that the great part which he has played in the port's development and the gratitude which we feel towards him on that account may be alike commemorated for all time to come.

His Excellency in reply said:

Your Highness has alluded to the harbour of Cochin. I can fully appreciate and sympathize with the hopes which Your Highness and your subjects must feel in connexion with a further development of this magnificent harbour. I am deeply touched by the kind reference which Your Highness has made to the part I played in initiating and furthering the development of the Cochin harbour, and I have no hesitation in saying that I have always regarded my own efforts in this connexion with satisfaction, and I still retain faith in the scheme which first attracted my interest many years ago. I, therefore, gladly accede to Your Highness' request to associate my name with the harbour.

I have every confidence in the future of a harbour so fully endowed with natural advantages and with such wonderful potentialities. I am optimistic enough to believe that the existing trade depression which must affect the prospects of Cochin as of all other ports will before long pass away, and my imagination reaches out to a future when India's increasing industries and commerce will inevitably demand more outlets than they have hitherto had, and the enterprise which led to the construction of this harbour will be justified in full measure by the great benefits it will confer.

Lord Willingdon's foresight and confidence were again to be proved correct, as the sequel will show.

Early in 1935, and after nearly five years of heavy strain and mental concentration, my old symptoms of insomnia returned, accompanied this time by the onset of a strange sensation at the back of my head whenever I bent over my desk to write. It was if the blood was surging up from the neck and coursing round to find an outlet. However, by dictating most of my letters and

reports I was able to stay on for two months before going on leave again. By this time the passenger vessels were due to come to Cochin. Under an informal agreement with the Bibby Line a regular service was to be installed if the port provided, first, lighting for the outer and inner channels—so that ships could come and go at any time of the day or night—and second, a port hostel on Willingdon Island where their passengers could rest for at least a few nights if necessary. In due course the Governments concerned agreed to this arrangement, and the first Bibby liner arrived at the port on 9th March 1935, the day after the hostel had been opened. Both events were largely attended and celebrated with great enthusiasm. The hostel was afterwards renamed the Malabar Hotel. My wife and I were able to leave on this boat.

On reaching home, my own doctor and one other could find nothing wrong, but dosed me with tonics and told me I needed open-air recreation, mental rest, and recuperation. However, the trouble remained, and I went to an osteopath. He examined me and ran a flexible conductor over the back of my head until he made contact with a place which started an indicator quivering on a small dial. He gave my head two sharp wrenches sideways through a hundred and eighty degrees each way, and told me to go home and 'fast' for seven days, but during this time I was allowed to drink the juice of four oranges and one lemon, to be repeated every two hours alternately with a pint of very hot water between each. This was the daily twelve-hour diet ordered from 8 a.m. to 8 p.m., and I had no difficulty in following it strictly; even more, I travelled from Torquay to Plymouth on the seventh day and gave a talk over the B.B.C. describing my daily work at Cochin.

After this I felt so much better that I put myself in his hands and made a complete recovery, mentally and physically, within two months. It appeared that I had wricked my neck, possibly by overdriving off the tee when playing golf at Cochin, and something had not righted itself. I distinctly remembered such an occasion, too. For the rest, he said, I was overweight and out of condition generally: the farther I walked and the more I played golf the better I should be. This proved successful, and shortly after my return to India the Government of India were good enough to appoint me as the Administrator of Cochin Port as well as its Harbour Engineer-in-Chief. As Administrator it

THE FOURTH-STAGE PRELIMINARIES

naturally fell to me to act as Chairman of the Advisory Port Committee previously mentioned.

With full agreement reached at last on all outstanding questions of policy and administration, it might be thought at first that, as describing an adventure, this personal narrative might now close. The fourth-stage works which followed were not unusual to major ports except in so far as they included two bridges, one strong enough to carry heavy rail and road traffic side by side, and the other to carry ten-ton lorries, for road traffic alone. Each was about two thousand feet long. My staff fell on these and all other works like hounds released from the leash, and all went without a hitch from first to last, so that by the time the war started in 1939 we had nearly finished. Incidentally, my prophecy at the Admiralty Staff Conference in 1919 had been justified; war had come within the twenty years I had estimated.

In carrying out these fourth-stage works I left as much as possible to my Executive Engineers and their staffs, putting in an oar here and there where I thought it would be helpful, and making sure that materials would be forthcoming before the boom in prices started. I had been warned in London that this boom might be on its way late in 1936, and by great good fortune managed to get all we wanted at slump prices, by sending detailed and urgent cables to the Director of Indian Stores in London, whose deputy (a Mr. H. West) rose very capably to the occasion. In India we were able to place orders for all the copper-steel required for the bridges, and in Germany all the copper-steel for the wharf. Partly by these means, and partly by doing the whole of the work with our own staff, we were able to save some £90,000 on our original estimate of 1920.

However, another phase of the adventure started with the setting up of the Port Advisory Committee and the primary task of getting its members, all representing different interests, to work together as one for the good of the port as a whole. If we were to go on for months or years debating every important principle or measure of improvement from the narrow view of this or that party, it would so nullify the proceedings as to undermine my own authority and make it plain to all that the interim use and value of a period of *ad hoc* administration had been negatived, and that a Port Trust under the guidance of an Administrator from the Government of India would have to be substituted. For

many reasons this would have been most deplorable, in view of what followed.

Fortunately my experience as Chairman of many staff committees in the National Whitley Council for the Home Civil Service once again came to my aid at this juncture. I knew it was not for me as Chairman to propose decisions, directly or indirectly; and I knew also that any attempt to force the pace was worse than useless, especially in India. The procedure adopted therefore was: (1) to present *all* the facts of a case objectively, in writing, and distribute them at least ten days before the date of the meeting, (2) to study the facts myself well in advance and form my own opinion in a few words which might possibly suffice later as a summing up of the discussions, (3) to invite every member to speak his own views (or the views of the Authority whom he represented), (4) to disentangle silently the differences of principle as they were being expressed, and (5) when discussion had ended, or come to a deadlock, to write a short resolution for their approval or amendment, a resolution to be proposed and seconded by themselves. In nine cases out of ten I found that my preconceived views would answer the question and be adopted. In the tenth case, owing to differences among the members, I suggested that the matter be adjourned until the next meeting or other specified date. This was also generally acceptable.

The Governments of India, Cochin, and Travancore each had two representatives on this Committee; and there were two from the British and Indian Chambers of Commerce, two from the Municipalities, and myself. From the beginning I deliberately rejected the old practice of 'playing off' one party against another, and let things take their own course. There were divisions, of course, but these happened between parties and talked themselves out. I had expected trouble over the yearly budget proposals, and in these cases I varied my methods by taking the Committee item by item through the whole statement of accounts. In addition, however, I had obtained from various sources the average expenditures of major ports in several parts of the world, so that if questioned on any matter of principle I could always have at hand figures for comparison. Especially was this useful in comparing the various *percentages* of income charged to maintenance and working costs, staff, loan repayments, and reserve funds. I found this a sure test of our own financial stability, and was pleased to

find we compared very favourably, on these broad lines, with the other budgets I had seen.

Thus it was that we progressed agreeably and happily on the works and in the office—until 1937, when 'that Mud-bank' as we began to call it, the 'friendly and immemorial Narakal Mud-bank', lying north of the harbour entrance, began to move southward, and we could do nothing to prevent it. This happened during the monsoon period, and within a month or two the approach channel, dredged to about thirty-nine feet below low water, began to fill up rapidly, but not to such an extent as to stop the ships using it. Fortunately, the deeper ships all arrived during the period of neap tides, so that there was an extra foot or so of water at low tide. What had started such a movement we could not guess, and it gave us much anxiety at first, but a comprehensive study of the history of sea contours, mud-banks, rain, cyclones, and earthquakes over the period 1835–1939 led us to the conclusion that there might well be a century-long cycle of such movements, and so relieved us of serious apprehensions. However, we could run no risks, and the Government of India agreed that my reports should be considered by an expert Advisory Committee in London consisting of one civil engineer and two geologists, one of whom should be a retired officer of the Geological Survey of India, Dr. J. Coggin Brown, O.B.E., and the other Mr. B. A. Keen, D.Sc., F.R.S., of the Rothamstead Experimental Station. The Chairman, Lieutenant Colonel C. G. Du Cane, O.B.E., M.I.C.E., M.I.Mech.E., M.E.I.C., represented Messrs. Wolfe Barry and Partners of Westminster, and with them I shared in a fascinating voyage of discovery which, if not conclusive in all its quests, at least corroborated my opinion and summed up its work in an admirable Report dated December 1938. The third paragraph of this report ran as follows:

We have no hesitation in classing the problem set before us as one of the most difficult and elusive in our experience, and its inherent difficulty has been accentuated by the lack of continuous observations before the year 1920. In many aspects therefore our report is admittedly tentative, but we are able to give certain opinions with reasonable confidence. . . . There has been complete co-operation throughout and the report is unanimous.

Actually, part of the fine silt of this mud-bank flowed at or near sea-bottom level on the flood tides, into the harbour itself, but the

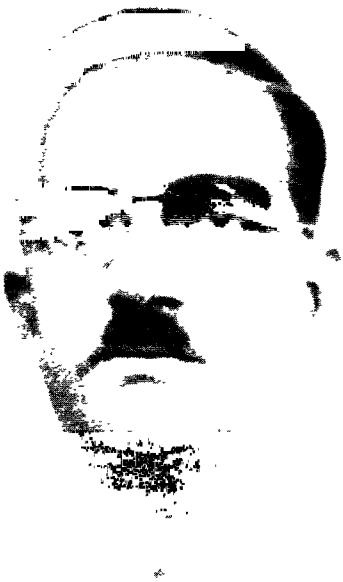
additional areas of deep water so recently made gave a sufficiently wide distribution of it, and no harm resulted then or since. The extra cost of dredging has certainly to be met, but on the other hand this same silt has been used to pump into new reclaimed areas in the harbour backwaters without materially affecting their use or natural flow, and land anywhere near the port limits becomes more and more valuable with increasing traffic and commerce. 'That Mud-bank' had done its best, after all, but in a manner no one could possibly have foreseen.

I had always been somewhat concerned by its tendency to travel along the coast, north or south, but mostly south, and on my return from sick leave in 1930 had lengthened the dredging ladder of the *Lord Willingdon* so that the channel could be dredged to forty feet at low water instead of thirty-five feet. As it happened, this proved a correct forecast of events; but what I had not foreseen was the fact that when we deepened and lengthened the Muttancherry mooring channel we unknowingly provided a safe silting area for the surplus of the mud-bank which, as I have said, was carried *into the harbour itself* by the incoming tides, especially at the full and change of moon.

The result was that no check to the regular use of the channel or harbour happened then, nor from that day to this, nearly twenty years later.



C. V. Venkateswaran
Assistant Engineer, now Chief Engineer



H. A. Fernandez
Assistant Mechanical Engineer,
later Superintendent (Retd.)



J. H. Atherton
Chief Engineer, *Lord Willingdon*,
later Dredging Superintendent (Retd.)



M. J. White
Chief Engineer, *Lord Willingdon*,
and Dredging Superintendent (Pipeline),
d 1941



Bappoo Khan
Dredging Master, *Lord Willingdon*



M. S. Menon, Barrister-at-Law
Legal Adviser, now High Court Judge,
Travancore



E. J. Pannikar
Head Draughtsman



Rao Sahib C. T. Sambandam Mudaliyar
Secretary and Statistical Officer, d. 1942

CHAPTER TWENTY

TEAMWORK AND ITS REWARDS

*The end of the Old and beginning of the New.
Domesticities, War, and Finis*

THE year 1939 brought the fulfilment of our plans and the successful completion of nearly all the works. The advent of war hastened the design and execution of the Naval works on the adjacent Venduruthy Island, and the plans for the construction of the aerodrome on Willingdon Island. The site allocated to the military as part of the port defences was occupied, and the Malabar Hotel, with the new Administrative Block next door to it, provided admirable quarters and offices for *all* war staff: military, naval, and air. An open-air swimming-bath between the hotel and offices, a new post-office, and a branch bank adjoining both, completed the amenities. The war we had foreseen had come and, Heaven be praised, we were ready. The deep wharf and rail and road bridge were brought into use and shortly afterwards the second road bridge also. Heavier equipment became necessary for handling exceptional loads, and in 1940 a passenger jetty and customs-house were built adjoining the hotel, together with a special rail siding and passenger platform.

For the period 1936-41 I had rented a delightful and spacious bungalow at Coonoor in the Nilgiri Hills. I was allowed to take a small staff and work there during the usual Government vacation of three months in the hot weather; so that counting the Easter and Christmas leave periods, and a 'casual leave' period of ten days, I generally managed to add another two and a half weeks' stay during the year. I had been granted a small allowance by Government for acting as Administrative Officer, and the whole of this was absorbed in maintaining the house and grounds in good order and keeping open house for all our friends and those business callers coming from a distance. There were seven and a half acres of lawns, flower-beds, orchards, and pine forest, and every week during our absence the head gardener packed a

varied assortment of fruit together with a large joint of first-class hill mutton for delivery by passenger train to Cochin, where our cook met the train and took delivery.

This house was called 'Springdale', and was connected by telephone to my office in Cochin. During the War I had more than one occasion to note the efficiency of the British P.O. telephone system in India. A notable example occurred when the Director himself was staying with us. I had urgent business with the Secretariat, a matter that had to be settled within an hour, and of which the Government had been informed some weeks earlier. The Director went to the telephone personally, and in exactly half a minute he had been put through one district exchange after another all the way to New Delhi and thence to the officer required. In another half-minute my business was settled, and in another minute he had rung up Willingdon Island for me and I had informed my deputy of the result. The Director had never raised his voice above a murmur all the time. Two minutes' work: surely a striking testimony to the influence of an officer of the Indian Civil Service of those days? All he had to say was, 'Director speaking: So-and-so Exchange, please.' I forget the exact sequence and words.

I am, and always was, sure that it was largely due to this delightful house at Coonoor and our new house on Willingdon Island, built to our own design, that we were enabled to last out those three later years in India and to keep fit until the last two months. I had planned the house on the ancient pattern of a frontage and two side wings which enclosed a small courtyard paved with tiles. This induced through ventilation for all rooms, the offices downstairs and our quarters above. It was the first building to be erected on Willingdon Island, and we kept open house there, as at Coonoor. Every night, by ourselves after dinner, we sat out on the roof of the eastern porch and found quiet peace under the stars before retiring to our rooms. The Cochin backwaters were indeed a 'magic of stillness' at these times. We had two plagues, however, rats by night and crows by day, and we gradually outwitted the first. The crows had to be stung with an air-gun, with an occasional shot which found a vital spot. The rats had their home in the stone, rubble wall which surrounded the island, and the full story of how they explored our premises and multiplied exceedingly as the reclama-

tion grew and covered itself with plant life would fill a small book.

Our domestic staff in this house and at Springdale was the most efficient, loyal, and trustworthy we have ever known, taken as a whole. The butler and dressing-boy, the cook and matey, the house peons, the gardeners, the *dhobi*, and menials—all combined to work as a team, and were proud of their job. Murugesan, the butler, belonged to perhaps the most ancient people in South India, the Dravidians, and had an extraordinary sense of natural good manners, courtesy, tact, and firmness. His innate skill and taste in arranging the flowers or setting the table for a big dinner-party were obvious, and his deep-rooted sense of honesty and loyalty conveyed itself, I am sure, to all the others. We could leave the house to go on six months' leave without troubling to lock the wardrobes, the plate and wine cupboards, etc., and with complete assurance of their safety. And he was resourceful in any emergency, sometimes in a most extraordinary way. Here is an example:

(We had just returned from home leave.)

'Master knowing that big black dog coming backside house making cook very angry stealing food?'

'What about him, Murugesan?'

'After Master going on ship I thinking he making too much trouble; therefore I telling cook we frighten him and he not coming back.'

'Good; and how doing it, Murugesan?'

'Master, I thinking I going bazaar and buying one little bomb like using in Temple; only little one Master, but making plenty noise.'

'And what then?'

'Master, I buying one good piece meat and putting little bomb inside. When night coming cook putting meat on kitchen floor and we hiding and seeing. Soon black dog coming, he seeing no one and so he biting meat, and then BANG! Master. But he not dead; he *running*, Master, *plenty* running, running *too fast*, and he never coming back! But' (virtuously) 'I not *killing*, Master.'

With great difficulty I smothered an inclination to burst into laughter at Murugesan's idea of being kind to animals, and told him that 'Murugesan doing very good work, but asking Master first if more dogs coming. . . .'

Our cook, Joseph, although a weak man physically and temperamentally, was willing to learn, in fact wished to be taught anything new. On one occasion we returned with a book of recipes used at a famous grill in Brussels, and when my wife had shown him how to use them he soon produced several of the dishes with commendable success. What he called 'Duck-Orange', for example, became a favourite with our guests as well as ourselves. When he first joined us (he was not a caste man) he had little sense of discipline, and Murugesan, most unwillingly, had to complain. I held a parley on the back veranda and cook admitted his fault, but (for him) very defiantly. I asked Murugesan to bring a chair and a light stick, and spoke my little piece:

'Now, cook. You know you were wrong, and now you are very rude. Therefore Master very angry. Government saying Masters not beating any servants, so Master saying this: will cook be fined eight annas or will cook have *three*—one, two, three—hits with stick backside? What cook like having?'

'Master, please I having three hits.'

The cook was then ceremoniously laid across the chair by the butler and the head peon, but exactly as the stick descended his courage failed and he took a moderate whack on his knees as he turned over to beseech the fine instead.

Next morning he appeared to Murugesan and ruefully displayed a faint discolouration on his left knee. The butler asked me what he should say. I replied: 'Tell cook Master very good to him. Master only hitting place where plenty soft meat: same place where *ayahs* smacking too much naughty babbas. Not hurting very much. But cook, he turning over, and stick hitting place where no meat, only bone. Therefore cook very silly, and if any more trouble I fining eight annas.' There was no more trouble, and the back veranda were satisfied that 'justice had been done'.

My wife also contributes this pleasant little story of 'Domesticities: The Indian Mind when Young'.

During the construction of Cochin harbour it became necessary at one stage to leave Cochin and transfer our office to Madras, nearer the seat of government.

We took our domestic staff with us and found a spacious house in one of the suburbs of Madras, a house probably built and occupied by merchants of the old East India Company. One morning when I had my daily interview with the cook he had a

request to make. His sister, a widow with five children, would like her eldest boy aged twelve to come and work for us so as to learn how to be a servant in an English household. Our household staff was complete, but we felt we should not refuse in such a case, and the boy was to be interviewed the next day.

Accordingly, the next morning a nice-looking lad was waiting on the back veranda. He had the clear-cut features of a Hindu, looked intelligent, and knew a little English. He had been to a Primary Government School but did not wish to continue his education nor could his mother afford to let him remain idle. So to his great joy he was told he could come and be a *chokra*—that is, a junior servant—and although he protested he did not expect any wages he was to receive five rupees a month—untold riches for a small boy.

Then his clothes were discussed. It was decided he should wear white shorts and a white coat, and six of these suits were then bought for him in the bazaar. He was too young to wear a turban, so while I hesitated about his head-gear, he said, 'Memsahib giving me one rupee, I buying one fine new hat.' With misgivings as to what the 'fine new hat' would look like he was given a rupee, and off he went to the bazaar. An hour later he appeared in a bright red felt cap, not a fez, but more like the pill-box hats that used to be worn by our district messenger-boys, and are sometimes seen on the stage to-day. Placed at the correct angle against his black hair and dark skin it certainly looked most attractive and he was allowed to wear it.

Although he had lived in Madras all his life, and only about three or four miles from the coast, he had never seen the sea. This had to be rectified, so one day he was given a seat next to our chauffeur and we drove to the beach. The Marina at Madras is about three miles long, and includes a magnificent stretch of sandy foreshore with big rollers always in action; a veritable boon to English children and their *ayahs* after 4 p.m. We got out of the car on to the Marina, where the *chokra* stood as if turned to stone. He said nothing at first and then murmured, 'Too much water, Memsahib! Too much water!' He was awed and fascinated, and did not want to move, far less to go down on the sand, so we let him drink his fill and left him alone.

Dusk was now coming down quickly, and presently a B.I. passenger ship emerged from the harbour and went her way south

to Colombo. She had all her lights on and was a fine sight, especially to the boy, who had never seen a big ship on the sea. When we told him this ship was going to England his eyes opened rounder and rounder, and when he asked if the sea 'went all the way to England' the reply quite dumbfounded him.

In the house he proved quite useful, and never had the brass been so brassy or the silver so shining as when he had done his work. He was keen to learn, and would stand just inside the dining-room during meals, watching the butler and other servants changing plates, handing dishes, etc. One day an Anglican Padre whom we knew called to say he was starting a class for servants and would like the *chokra* to attend it, together with any other servants who were not Christians. As it happened, the others were either R.C.s, Hindus, or Moslems, so the *chokra* was the only one available. He seemed quite pleased at the idea and was told to present himself at the Padre's house at 9.30 a.m. on the following Monday.

At the end of the week I suddenly remembered this class and asked the *chokra* how he was getting on. He came and stood at attention, very pleased to be asked about it. He said, 'That Padre verree good Padre; he telling us good storee about one man and one woman. They living in one big garden with plenty trees and plenty fruit, one verree nice garden. One day one snake coming in garden and he very clever snake' (here he giggled); 'that snake he talking to woman. (Memsahib knowing snake talking?) He telling that woman to eat fruit and she eating and giving to man. Padre he saying he telling us more about snake next week.'

So far, so good, and the Story of the Fall had begun for the *chokra*.

About two weeks later it was discovered that the *chokra* was not attending his class. When asked why, he said he had too much work; but the butler explained privately that the boy did not want to go any more. So the *chokra* was sent for and answered the summons with a somewhat defiant look in his eye. He said, 'Padre saying that big snake very wicked always making people telling lies, also stealing and saying verree verree bad talk. Padre saying I can't be a Klistian and telling lies. So I saying I not wanting to be a Klistian. I telling plenty lies. All peoples telling lies, so not going any more days.' The butler reminded him that Master and Madam not telling lies, whereupon he qualified his statement

and said: 'Oh, no, not English peoples, I mean Indian peoples; they all telling lies'!

This sweeping statement was not borne out by all our years of experience spent in various parts of India; but when one thinks that it came from a small boy who, although living near Madras, had never seen the sea, perhaps it is not so surprising. During the time he worked for us we found him honest, obedient, and resourceful. His honesty was put to a severe test one day, but stood up to it. I sent him to the bazaar to match a reel of silk and hurriedly pulled out what I thought was a five-rupee note from my bag and gave it to him. In due course he returned with the silk, came and stood at the table, and proceeded to empty one of his pockets. To my utter amazement he produced a sheaf of notes as well as much silver and copper. He put the notes carefully into their denominations: ten rupees, five rupees, and then piles of silver rupees, eight-anna pieces, four-anna pieces, annas, and last of all copper.

When he had placed them all on the table entirely to his satisfaction he looked up and said, 'I thinking Memsahib making mistake and giving me one hundred-rupee note, and not five rupees.'

To my horror I realized then how careless I had been; the hundred-rupee note had been given me the night before for a very special purpose, and as we never kept much money in the house I had intended to bank it, but the present fascination of an effort at dressmaking had put it out of my mind. Needless to say, the *chokra* was duly rewarded for his honesty.

People of all ages have constantly been interested in food and diet, and rightly so. As someone has said, 'We are what we eat,' but a sound mind in a sound body is only part of the truth, man being a compound of body, soul, and spirit; and if his food comes from a sound source he can if he pleases be sound all through.

In India we soon learned that the simpler our food the better our health, and we took care to see that it was so. As I have said, our mutton came from the hills and had been fed on grass growing on natural soil; our fish came straight from the nets on the incoming flood tide, chickens and ducks were reared in our own grounds and fed on 'sweepings'—that is, on the unpolished rice spilt on the floors of rice godowns. As mentioned before, our

vegetables and fruit were grown in our own gardens. 'Pure' milk being often watered or tainted at source, we used only unsweetened Nestle's from small tins, and carried these with us on tour. Our bread was baked by the nuns in a Cochin convent, to whom we were also indebted for macaroni or spaghetti. Our butter came 'cold storage' from New Zealand. Joseph, the cook, could make a good curry, but we ate sparingly of the rice, which, being unpolished and properly cooked, was a vastly more nourishing product than the artificially 'purified' rice sold in England. Vegetable curry, egg curry, chicken curry, with condiments as you like it: all these made a change.

A favourite dish with us and our guests was a fish custard with shredded fish and thinly sliced tomato cooked in an egg-and-milk custard. This, preceded by a simple horse *d'œuvre* or 'whole-chicken soup' (either in jelly or liquid form), and followed by a savoury of cheese, served us well for a routine dinner or supper. Breakfast and lunch were equally simple and of much the same pattern as English food, although being always fresh and not corrupted by modern adulterants and the 'usual additives' (hateful words); they gave maximum nourishment at minimum cost. Our great addition at breakfast time was a big soup-plate full of mixed raw and stewed fruits: Malabar paupau, figs, oranges or tangerines, plums, rhubarb, Kulu apples, plantains (bananas): several of these as they became available. Fruit in India cost but a tiny fraction of the prices paid in England to-day, our tea and coffee likewise, coming straight from the plantations.

On guest nights, of course, we had to amplify our simple diet and increase the number of our bearers, who seemed born to this kind of office. I had obtained the services of an excellent Malabar cabinet-maker for the furnishing of our house, and instead of having one long dining-table, ordered five smaller ones, each five feet by three feet. One of these would suffice for four people, two placed together for six, three for eight, four for ten, and five for twelve. Ten was the best number, of course; but we could dine twenty at the five tables separately, though it confused the bearers. They invariably preferred the two rows, with Madam and Master at the two end seats, and they knew exactly how and when the wines should circulate.

My wife kept all the household accounts, cheque-books, and pass-books, and made an abstract summary of expenditure under

THE FOURTH-STAGE PRELIMINARIES

several headings every month-end. These varied a good deal from month to month, but, in addition, the rent for our house in Coonoor was paid direct from my Bank in London to the owner in England; a part of my salary was deducted at source for Income Tax as well as my contribution to my own Provident Fund; various annual subscriptions to societies and institutions, charitable bequests, presents, and allowances were also paid in England and met from sums remitted to my London bank each month. With the greatly increased expenditure on entertainment and other liabilities in India, we saved very little out of our full emoluments of three thousand five hundred rupees per month, and we could make no investments whatever. Here is the Cochin Abstract for January 1939 (as it happened, a large stock of wines and spirits had been purchased several months before, and do not figure in this list):

	Rs.	As.
House rent (including part of November)	190	13
Wages and tips	211	3
Electric light	36	13
Housekeeping	434	4
Medicine and toilet	21	10
Papers, etc.	9	0
Post and stationery	20	4
Clubs	223	5
Furniture	4	4
Childrens party (extras)	40	8
Presents	59	13
Doctor and X-ray	25	0
Her Ex.'s Lottery Fund.	16	0
Clothes (G.A.B.)	38	4
" (R.C.B.)	71	10
Sundries	21	15
Rickshaws *	6	0
Donation to Club Tree	10	0
<hr/>		
	1,440	10
	Say 1,441 Rs.	
	(January 1939)	

* Nearly all our journeys were made by water in a Government launch.

Note: Rupee at one shilling and sixpence.

When war came on 3rd September of this same year we were not only ready on the works. Our office arrangements were

likewise complete, and, having passed through a similar experience at Rosyth Dockyard in 1914, I had also prepared in advance plans for the special policing of the port area. When therefore the Director of the Royal Indian Marine wrote and requested me to become Naval Officer-in-Charge with the rank of Commander I asked to be excused on the ground that I had always been a civilian and knew exactly what I had to do in that capacity; in my judgement it was better to appoint a pukkah naval officer to the post, and one with the rank of Captain, not Commander. This advice was accepted.

But there were great differences between conditions at Rosyth and Cochin. At Rosyth people knew quite well the meaning of war and the restrictions necessarily imposed on the civilian population, the strict regulation of permits to enter port premises, the iron discipline at police gates of entry, the meaning and use of cyclist patrols, the day and night watching, the dousing of lights, etc.; they did not know much of what went on behind the scenes: the stream of code messages, the reports of spies and their activities, the precautions to be strictly observed in reference to So-and-so, the network of communications with the regular Police Services at Edinburgh or Perth and elsewhere, and much else.

At Cochin the Indian inhabitants had little or no conception of essential restrictions within a prescribed area, and none at all of the reasons for them, which could not even be mentioned except to one or two of my own staff. For this reason my wife had, at first, voluntarily coded and decoded all secret messages to and from Government, but the work became more and more involved and at last I roped into service an English padre (Cambridge)¹ who not only spoke Malayalam and Tamil fluently, but also kept a car and cycle and was bursting with energy and delight to be of use in such a capacity. With the help and approval of the Cochin State Police we collected a special and sturdy police force of civilians and had them all sworn in, including ourselves. Thus my 'Defence Assistant', as he was ranked, and my legal adviser, Mr. M. S. Menon, Barrister-at-Law,² provided me with just the backing I needed at this critical time.

Unfortunately for me, however, the installation of such a new

¹ The late Rev. G. N. Shackle.

² Now High Court Judge of Travancore.

system, and its rigid rules and responsibilities, gave me more imperative duties, and therefore more imperative powers of control; and after using them strictly in accordance with my imperative instructions from the Government of India, the story went round that I was setting myself up as the 'King of Cochin', and a little later, 'a tyrant; another Hitler'!

Actually, the people simply could not believe that South India would be directly in danger of war. It all seemed so peaceful. 'Why not carry on as we are, and wait until it comes?' was often said to me by those who should have known better, and I remembered a similar case at Rosyth in 1914. I was on Sunday night duty, and received a cable from London informing us that Zeppelins were in the North Sea and believed to be approaching the Forth. All visible lights were to be doused immediately. In fifteen minutes every light, lamp, and candle was extinguished in the dockyard area save one, and that was at the church, where the padre was preaching his sermon. The verger apparently had refused to turn off the church lights when one of my special police requested it, and I had to go myself and see it done. Apparently it was thought sacrilegious to interrupt the sermon! Anyhow, what the Zeppelins bombed was the Moor Market in Edinburgh; they missed Rosyth.

I do not propose to deal with the War as an integral part of *Cochin Saga*, first, because it is not germane to the main purpose of this book; second, because I was concerned at first-hand only with the period September 1939 to March 1941; and third, because to cover the subject properly I should have to disclose the content of many discussions and documents which it would be best still to keep secret.

After the War started in real earnest (so far as India was concerned) Singapore fell and vital elements of Bombay port blew up, leaving Cochin as the one bastion of Empire on the direct route both to Aden and the Far East—if we except Colombo in Ceylon. Not only so, but Cochin provided the one reliable sheltered harbour for mercantile traffic, and, as the Finance Secretary to the Government of India wrote to me later: 'Cochin has proved to be of *incalculable* value in this war.' In addition, when Colombo or its approaches were bombed by Japan, it may well have been the reinforcement of aeroplanes flown from Willingdon

Island that turned the scale against further attack, even when Colombo appeared defenceless.

In conclusion, and after many years of reflexion, I must record what I consider to be the four main factors which combined to save Malabar in war time and helped to strengthen the economic position of India afterwards:

First, the political foresight of Lord Willingdon in 1919-20 when he sensed the need for greater economic development in the Madras Presidency coupled with the building of a big port at Cochin.

Second, the coincidence of my own conviction, in 1919-20, of the coming of a greater war within twenty years, and the need for ports to be designed for defence purposes as well as economic development.

Third, the design and construction of the major port of Cochin as a logical outcome of these two conceptions, and the completion of the port just within the time prescribed notwithstanding every effort made to prevent its continuity at each stage of its progress.

Fourth, the continued growth and value of Cochin as an indispensable asset in the economic balance-sheet of India as a whole, the details of which are given in the third chapter of the Epilogue.

Looking back over the long Saga of Muziris—Cochin and its relation to that of Europe—it seems not unreasonable to trace an origin behind the evolution of what appear at the time to be quite unrelated facts and factors, an ecologic principle of independence of parts within the interdependence of all. If this be true then pure nationalism and nationalization must be false ideals: the world can become civilized only by the integration of its parts; below all surface appearances there must be a purpose and destiny which govern progress in ways unfathomable by rival politicians, industrialists, iconoclasts, and scientific materialists.

Cochin Saga, therefore, without any such preconceived aim, direct or indirect, seems to present an interesting illustration of this principle—a principle which India might do well to regard as applying to the whole of the British rule between the years 1858 and 1947, and to value it accordingly. The next fifty years will probably reveal many truths beyond the ken of man as he is to-day.

PART FOUR

EPILOGUE

INTRODUCTION TO EPILOGUE

THE first of these three chapters was written in 1944 at the request of the late Sir Edward Harding, G.C.M.G., K.C.B., in his capacity as Chairman of the Cape Town Branch of the South African Institute of International Affairs. It was his opinion that a paper on the 'real' India would meet a real need in South Africa and elsewhere—an opinion gathered from his experience as British High Commissioner in South Africa. This chapter is reproduced in its original form, and readers may now judge, fifteen years later, how far its conclusions were or were not justified.

The second chapter was written in 1949, also by request, for the Rev. Canon H. D. A. Major, D.D., then the Editor of *The Modern Churchman*. He believed that an article on the Hindu religion as analysed and elucidated by Sri Aurobindo in his book *The Life Divine* would have value in the study of comparative religions, especially if its author had lived in South India and could bring some personal knowledge of the origins and practice of Hinduism. This article was duly published and permission kindly given for its reproduction in pamphlet form. It aroused interest in parts of England, India, and America. Sri Aurobindo himself, a year or two before his death, saw it, but his reaction, if any, did not reach me.

Both these chapters may be regarded as having sprung from my varied experiences in South India, and I make no apology for their inclusion in this Epilogue.

The third chapter, however, has been written in 1957. It possesses more interest as such because, first, it describes the fuller development of Willingdon Island since my retirement in 1941; second, it compares previous estimates of the growth of traffic made in 1930 and 1935 with the main figures of 1956-7; third, it presents appropriate quotations from British Press reports concerning Cochin port dated April 1957 and similar quotations from Indian reports made in 1936 and 1941. This comparison reveals how official and press reports of the same event made in India can vary from press reports made in England sixteen to twenty-one years later.

CHAPTER TWENTY-ONE

THE REAL INDIA

Marriage, Education, Work, Religion, Legislation, Industry and Commerce. Conclusions

A MARKED revival of interest is noticeable in the problem of India's self-government. There have been similar revivals before but mostly in response to movements generated in Britain or India, and the British public have made it clear that the people's conscience is still active on the subject of India's right to self-determination. India's views, of course, or some of them, have not lacked publicity.

But the present revival outside India is both on a wider scale and based on a sounder foundation: it is a demand for accurate information, free from any prejudicial bent, rather than precipitate action in any direction. The long series of enquiries and conferences which preceded the Reform Acts of 1919 and 1935, and the working of the Acts themselves, have borne fruit in two ways: (1) a revelation of unsuspected cleavages of opinion in India has been given to the world at large, and (2) a vital experience of administrative difficulties, to India in particular. The outbreak of this war and the failure of the Cripps' Mission lit up the problem for all to see. Here at last was exposed to the world the magnitude of the racial antagonisms between Indians in their own country. Here, it was at last realized, could be no problem for superficial journalism or well-intentioned sentiment. Indeed no. Here was a problem whose complexity appeared so great as to convince not only India's well-wishers in England, but other nations, including even America, that no facile solution lay ready to hand were it not for the so-called 'divide-and-rule' policy of the British Raj.

People now realize that the Indian problem must be seen in an Indian perspective and not with untaught Western eyes. Even to those who best know the country and the people, and who entirely desire their welfare in every respect, it is a bewildering one, the vital issues of which are confused by sectional clamour and

unwarrantable interference. Too long has the popular journalist or author, intoxicated with the exuberance of his own *velocity*, been allowed to mislead public opinion; and it is the purport of this paper to describe very simply and in correct proportion the salient features of the Indian problem.

I must try to give the basic facts about such personal matters as marriage and children, education and work, as well as the larger subjects of religion and politics, industry and commerce. I shall refer to India's own plans for industrial and agricultural development and the reaction to them in well-informed quarters; and I must suggest a reasonable and logical conclusion. This outline will be bare of detail, but I will guarantee three things: its correct proportion, its relevance, and its sincerity. It has been read by three of my friends from India who have made useful suggestions, all of which have been incorporated.

Marriage

All over the world the question of marriage is now being discussed with a frankness and a sustained persistence which, except perhaps in the Roman world of A.D. 100-300, I believe to be new in history. It is not, I think, that the principle of monogamy is seriously threatened, but, rather, that people are striving to find the essentials of right marriage in order to preserve monogamy as the soundest, and possibly the oldest, of marriage customs.

Against this background of enquiry among other nations we find in India many customs which vary according to tradition and to social and economic needs. We have, for example, in Southern India, the orthodox polygyny of the Muhammadan, the orthodox polyandry of the Toda (believed to be the descendant of the neolithic pre-Dravidian), and the temporary or permanent monogamy of the Christian and Hindu, all within a comparatively small area. The caste system of the Hindu is deeply interwoven in the marriage custom of that race and encourages, if not requires, early marriage. Only recently in Cochin State has the marriage age been raised to sixteen years, and against strong orthodox opposition.

On the other hand, the educated Indian woman is breaking away from some of the old traditions, including the rigid purdah system, and is proving herself an accomplished modernist in public affairs as well as a capable mother in her own home, retain-

EPILOGUE

ing the best of Indian life and gradually adapting the best of the Western.

India, like China, is a strongly sexed country, and the vital statistics are alarming, the population having increased from 306 millions in 1921 to 338 millions in 1931, and to 389 millions in 1941. This corresponds with greater areas of land under cultivation, more purchasing power, more internal security, and wider and better medical services; but it suggests that the tendency is for the population to increase to the extreme limit of, and even beyond, whatever food supply is produced, for there is a sad excess of under-nutrition even now; moreover, both soil deterioration and erosion are increasingly evident.

Some observers think that with greater national prosperity the birth rate would decline, as in England, while others reject this theory as being misapplied to Indian conditions, and indeed, as contradicted by the statistics themselves. Of this huge population the Hindus, including the depressed classes, number about two-thirds, the Moslems a bare quarter, and the others in diminishing proportions: Christians, Sikhs, Jains, Buddhists, Parsis, and Jews.

The double problem seems to be that of artificially restricting the birth rate to something like its present maximum and of greatly increasing the food production over new and existing cultivation without demanding more labour than is already available. The soil problem is under close investigation, as will be seen, but the practice of birth restriction is opposed to the principles of both Hinduism and Roman Catholicism. Nevertheless, it has been seriously suggested by some progressive Indians that free education on the subject of birth control is a more urgent necessity than the provision of more irrigation and more 'soil fertilizers' *[sic]*.

Some of the basic reasons for the high fecundity in India are said to be the climate itself, the kind of food taken (some of it high in Vitamins D and E and some with its admixture of condiment, spice, and curry), the comparative lack of sports and other pleasurable diversions, and the economic urge to produce children as workers. These seem to be fairly constant factors, and I am inclined to agree with those who, with every respect for the sanctity of tradition, believe that a higher marriage age and a suitable form of birth control are essential to a stable and prosperous India. The increasing literacy of women may gradually

achieve this automatically, but the problem is deep-seated and real, and of equal urgency perhaps with any other. We will call this problem No. 1.

Education

How is it possible for these vast masses of people to be educated? If we take the term 'basic' to mean what is true of say ninety per cent of the population we discover that India is illiterate—and if we go a step farther and try to imagine the difficulties of teaching only the children, or the adults, of an illiterate population of 350 million souls, we find that India must remain illiterate, on the whole. At least, that seems the common-sense view, but perhaps in this matter very uncommon sense is required, and recently a plan has been produced by Mr. John Sargent,¹ a Government authority, which foreshadows a marked increase of literacy though at an enormous cost, rising in fact to £235 million per annum in fifty years' time. This cost would be distributed over the Provinces and there would be decentralization, which in India means rather more inefficiency than elsewhere owing to the enormous areas to be inspected and supervised.

The fact remains, however, that the children are required to work in cottage or field industries almost as soon as they can walk, talk, and understand a simple instruction. As everyone knows, India is a highly productive country: jute, cotton, and rice; tobacco, tea, and opium; coffee, pepper, spices, and sugar; wheat and barley; coconuts and oilseeds; timber; cattle, sheep, and poultry, and so on; and the education required for the rearing of such products is imbibed from sources wholly outside elementary schools. The children grow up in an atmosphere which is constantly educational to their immediate needs, and it is difficult to convince their parents that anything more is necessary.

Nevertheless, the peasant farmer of India grows into a very astute and industrious person. His methods may be ancient—some of them are; but he cultivates his ground—as well as he knows how—to the last square yard of productivity; he knows what his crop is worth and what rent he should pay. He and his whole family, as a class, are sober and industrious; they truly inherit the earth to a degree only found in the great Eastern countries. They are indifferent to Governments so long they as

¹ Now Sir John Sargent, C.B.

can work in peace and enjoy fair treatment, which they certainly get under British rule.

It is true that plans for doubling soil production are being prepared, but if these are found practicable they will certainly not have a good effect on literacy as such: the children will be required elsewhere, at any rate for considerable portions of the year. Perhaps the education of India's rural illiterates can only be done in the evening, and then chiefly by a completely new technique of radio-television on an elementary scale. It may be added that both the Indian Army and the jute and cotton mills provide educative centres in their respective areas.

For the literates, the kind of education given and its scope have been matters of controversy almost since 1858 when British education began. Broadly, the charge has been that although the English language and English literature have been eagerly assimilated, Western culture has on the whole been given undue prominence in an oriental civilization, and that the teachers have been either lacking in numbers or in proficiency owing chiefly to what has been called 'a parsimonious and unimaginative Treasury'.

Broadly again, the system has followed the English models of primary and secondary schools, colleges and universities, with State-aided convents and other religious institutions doing a good deal for the lower and middle classes. It is noteworthy that schools are most frequent along and near the west coast of India, the Indian states of Cochin, Travancore, and Baroda having a higher degree of literacy than any other equal areas of India. There are institutions for training in science, engineering, agriculture, forestry, etc., and one of the criticisms of the educational policy in India, as in England, is that more might have been done in the direction of modern science. On the other hand, the impact of some modern sciences in England upon the comparatively modern Christianity of the Reformation made deep cleavages among the English people. For the British to have introduced and propagated these modern sciences in India, where the religious system is so much older, and before there was a strong demand for them, might have brought bloodshed and disaster. In the older sciences, of course, India has shown the way, in mathematics particularly.

Education is India's problem No. 2: a high percentage of illiteracy and great unemployment among the literates, the supply greatly exceeding the demand.

Work

We have already referred to work in cottages and fields, and have now to consider that small human fraction of India, men and women—clever, eager, sensitive, zealous—and their educated reaction to commerce and politics. They play an important part in Government controls, in the British Services and the political assemblies. They overwhelmingly preponderate in law, communications, posts, and telegraphs, and in all clerical life. The merchants finance and manage enormous factories; they conduct overseas business and meet the English merchants on their own ground. The professional classes are spreading rapidly; the soldiers are among the finest in the world, and the civil artisan class, educated or not, is wholly Indian and Anglo-Indian (Eurasian). However static his past, the educated Indian, man or woman, takes to modern life as a duck to water. It is, in fact, the inevitable reaction to a long period of inertia, and partly due to the complementary influence of British education and British industry.

Though late in time, literate India has been born again; it is a strong and lusty family, and, in simple terms, is suffering from growing pains. That is exactly the position; and it has been sadly misrepresented. The trouble is that the family is not wholly at one as to who should inherit the family estate, and already, in Government Departments, the authorities have been forced to lay down a scheme of rationing, so to speak, among the many claimants for Government posts. Here we find increasing and aggressive competition not only between Hindu and Moslem, but also between Brahmin and Non-Brahmin, Nair and Christian, and others. Although this is an illustration of little of the larger national problem in so far as it is a struggle for place and prestige, the fact is that industry has not developed quickly enough to keep pace with education, and such aggressive competition was bound to arise among the different classes.

As to qualifications and aptitude, I found that both my indoor and outdoor staffs were efficient and loyal, the indoor and superior staff mostly Hindu, the ships' crews mostly Moslem, the labour mostly Christian. So far as my personal staff were concerned, I regarded them as collaborators rather than subordinates, and I was richly rewarded. I learned much from them and I think they

EPILOGUE

would be the first to acknowledge that the debt was reciprocal. It was a partnership in ideal proportions of self-discipline, mutual respect, and mutual assistance, and if, from time to time, we had our differences they, too, were signs of life and kinship, not of cold-blooded indifference. My experience must have been typical of large numbers all over India.

It will be seen therefore that in each phase of personal life, India has a problem of outstanding difficulty: in marriage and population, in education, and in employment.

Religion

We pass now to the wider basic considerations. Industry supplies the material needs of life, commerce distributes them, legislation applies laws which govern both, and religion either reveals the ethical principles which should permeate and condition all human activity or else prescribes an ecclesiastical and cultural system by which, indirectly rather than directly, human life can be influenced for good. From time immemorial these two principles have been in conflict and the end is not yet. Perhaps, after all, they are complementary. In unravelling these four-fold strands we may find ourselves unravelling the rest of the Indian riddle, and we will unravel them backwards.

First, Religion: Whatever form its religion may take, whether systematic, credal, or mystical, India is at root a deeply religious country, and Hinduism is a system whose roots are in the remote past. There was a civilization at Mohendaro in Sind more than three thousand years before Christ which nursed the religions that gave birth later to the *Rig Vedas*, the first collection of ancient texts and hymns, and sacrificial formulæ addressed to the divinities of sun, and stars, and of fire. To this was added, later, the *Upanishads*, which contain the doctrine of transmigration and reincarnation; and then still later the *Mahabharatas*, 'a gigantic collection of compositions' reaching forward to about the year A.D. 200. In the sixth book of this collection we have the inspired *Bhagavad-Gita*, the *Song Celestial*, to quote Edwin Arnold, with its exalted and austere cosmic philosophy.

Hinduism is a vast literature reflecting the forms of worship, the mythologies, the cults, the religious philosophies of thousands of years. Imagine the effect of such a religion which, although undoubtedly influenced by Buddhism, has never had its own

Reformation, its Martin Luther, its higher and lower criticism and its liberal modernist, upon the life and soul of a nation; then place beside its transcendental philosophies and systematic polytheisms the simple monotheisms of Muhammad and the esoteric practices of the Yogi and other mystics, and some idea can be gained of the difficulty of finding a common meeting-place, a kind of common multiple which can permeate and influence legislation. Indeed, the Hindu conception of religion is wholly other than ours, and in none is there a common ethic and practice as provided in the religion of Jesus by the Lord's Prayer, the Two Great Commandments and the Beatitudes—the spirit of which has entered so deeply into English social legislation and English ideas of justice, and is indeed greatly honoured in parts of India by some of the Hindus, who have a very clear conception of the Christian ethic as it should be translated into action.

The reaction to Christianity in other quarters is obscure. There is an anti-Christian school, producing anti-Christian pamphlets; a Gandhi campaign on behalf of the untouchables for whom Christianity rather than Hinduism had been a saving grace, and a movement towards Catholic art in some Hindu temples. I am not sure whence these movements derive, but a change is pending, if only just becoming visible.

It is much to the point that Dr. H. D. A. Major of Ripon Hall, Oxford, has, at this juncture, produced a little book called *Basic Christianity, the World Religion*, in which he reduces to its elements the simple teaching of Jesus and shows how it might be assimilated by both of India's great religions without altering their own structures of belief and practice. A remarkable little book, published by Blackwells of Oxford, to which I would like to draw attention as bearing strongly on one of India's great problems.

Legislation

The approach via religion helps to clear the air, but it has to be remembered that the Legislature concerns only three-fifths of the whole country, the remaining two-fifths being occupied by the Indian States, numbering 562 and governed by hereditary rulers under the suzerainty of the Crown. The relative independence of these States, not only to the British Government but to any Government which might take over British India, is not the least

EPILOGUE

of India's difficulties, for the States have loyalties and traditions of tremendous local significance which are most zealously guarded as a sacred trust by their rulers.

In British India there are eleven Provinces in which the framers of the Act of 1935 made a comprehensive attempt to satisfy the claims of all parties and castes. The names are Bombay, Bengal, and the Punjab; Bihar, Assam, and the North-west Frontier; Orissa, Sind, and the United Provinces (Agra and Oudh); the Central Provinces, and Madras, the oldest of all. Each Province has a Governor, and each Governor a Council of Ministers and a Legislative Assembly. In six of the senior Provinces there is also a second chamber called the Legislative Council, to which the Governors may nominate a minor proportion of members. There are about thirty million voters who are influenced to a large degree by the three active political organizations, the Indian National Congress, the Hindu Mahasabha, and the Moslem League.

The constitution of the Assemblies is by popular election on a property or tax-paying basis and seats are allotted to twelve groups, namely, the General Population, Muhammadans, and Women; Anglo-Indians or Eurasians, Europeans, and Indian Christians; Backward Areas and Tribes, or 'Scheduled Castes'; Commerce, Industry, Mining, Planting (one group); Land-holders, Labour, Universities, and (in two Provinces only) Sikhs. The numbers elected to each group are reasonably representative of the community and the total number of seats varies from 228 in the United Provinces to fifty in the North-west Frontier. The total in the eleven Provinces is 1,585 seats, *of which the Europeans hold only twenty-six.*

In the second chambers the members are drawn from the general population, the Muhammadans, the Europeans, and, in Madras only, the Indian Christians. There are 186 seats in all, *of which the Europeans hold only nine.* Thus the Provinces make their own laws and administer their own areas.

At New Delhi, the Government of India and the Governor-General act both in their direct and over-riding functions under the Act of 1935, which provides for a Governor-General's Council of about fifteen members and the two chambers as for the Provinces. The Government discharges its present duties through seventeen departments: Finance, External Affairs, Home and

Legislative; Commerce, Labour, Civil Defence and Education; Health and Lands, Defence, Railways, Supply, Commonwealth Relations, Information and Broadcasting; War, War Transport, Posts and Air; Industry and Civil Supplies. Relations with Indian States are dealt with directly under the Viceroy in his capacity as Crown Representative and not by the Government of India as such. The judicial system and legal advisers are largely staffed by Indians, although appeals from the High Court may be carried to the English Privy Council.

Such is the great legislative structure of India, reasonably democratic, *overwhelmingly Indian in numbers and adapted to the reasonable needs of all parties, castes, and creeds*. For all practical purposes, India is actually autonomous, and it is amazing how this fact has been suppressed or misrepresented. It is true that certain over-ruling powers of the Governors and Governor-General are used occasionally, but very reluctantly and only in cases where the lawful business of the country is at stake. No better electoral system and no better-proportioned political structure has yet been suggested by any responsible body of opinion, and it has certainly brought to light the various differences of Indian opinion.

Industry and Commerce

We must now take a broad view of India's trade as a whole, trace it to its sources, and consider it in relation to the political complexion of the Provinces just mentioned, and to certain plans for giving the Moslems separate national representation. India's trade is in a healthy state, and since the war India has become a creditor nation. Before the war, India and Burma together constituted Britain's fourth best customer with an export and import value of commodities of £93 million against £147 million with the United States, £109 million with Australia, and £102 million with Canada. The Indian portion of this trade was handled chiefly through the major ports of India now under the control of local trusts responsible to the Government of India, and not to the provinces in which they are situated.

In order of magnitude the figures are Calcutta, handling eight and a half million tons of goods per annum, Bombay six and a half million, Karachi two and a quarter million, Madras one and a quarter million, Cochin one million, Vizagapatam half a million.

EPILOGUE

In addition, there are the minor ports under the control of the Provincial Governments, and certain ports belonging to the Indian States, most of which, though not all, are open roadsteads. There is also Chittagong, a railway port on the extreme east and near Burma.

It will be noticed that out of a pre-war total of twenty million of goods tons handled every year at the major ports, Calcutta and Karachi handled between them ten and three-quarter million; more than half. Now these ports are in the provinces of Bengal and Sind, where the Muhammadans hold a majority, as they do also in the provinces of the Punjab and the North-West Frontier, which adjoin Sind, and it has been proposed that these areas should be politically separated from the rest of India under the alternative methods known as Pakistan and Regionalism, in some form or other. I have grave doubts as to the political and economic consequences of such a partitioning, fiscal and otherwise.

First: It is of the essence of the proposal that the Moslem areas shall be autonomous, although, on the whole, there will be large resident minorities, as, in fact, there will still be important minorities in the Hindu areas. Large resident minorities are always a danger.

Second: This double autonomy means either a duplication of all-India public services such as Customs, Police, Posts and Telegraphs, Major Ports, Railways, Defence, etc., or else:

Third: The creation of a Central Authority to which both would be subject on certain matters, thus creating another problem over a new Central Constitution, as there is now.

Fourth: Regionalism takes the two large ports of Karachi and Calcutta from the total potential of India as a national unit in international affairs.

Fifth: It also confirms and consolidates racial prejudices and adds a new ground of dissent in that Moslems, who comprise barely one quarter of the total population, will control the ports handling most of India's trade.

Sixth: It will complicate and aggravate fiscal difficulties and lead to road and rail disputes in connexion with the handling of hinterland traffic.

Seventh: The external naval and military situation will be greatly complicated, unless it is entirely removed from political control.

These are sufficient objections, surely, to suggest that Pakistan or Regionalism is a mistaken and dangerous political expedient, besides having no basis in economic reality.

Development

We must now look at India's own plan for development, called the Bombay Plan, whence it proceeds. Its clearly-stated and entirely praiseworthy motive, is to raise the standard of living all over India. It is to cost seven thousand five hundred million pounds in fifteen years, and it is to achieve its aim by altering the balance of economy as follows:

(1) The National Income is at present (pre-war) made up in the proportion of Agriculture fifty-three, Industry seventeen, Services twenty-two.¹

(2) This proportion is to be changed as follows: Agriculture forty, Industry thirty-five, Services twenty.

Notwithstanding the twenty per cent reduction of the figure for agriculture, the food output is to be at least doubled, which gives an idea of the extent to which industry is to be raised in comparison. It is a stupendous task which the Bombay reformers have set themselves, and how wise they were to preface their report with the remark that the success of the plan would depend on there being a Government in power which would enjoy the entire confidence of the people! It has been explained that this does not necessarily mean a Congress Government, or a purely Indian Government; it is more in the nature of an axiom in Euclid, a logical premise.

Meanwhile, the Government of India has appointed committees with able leadership in a new Department of Development and Reconstruction (not previously mentioned) to prepare similar plans of reconstruction, and I have no doubt that the Bombay Plan will serve an excellent purpose if only as a basis of comparison.

My own reaction to the Bombay Plan is, first, if it is to cost seven thousand five hundred million pounds to raise the whole standard of living, then the money will have to come, in the main, from industry, which means that India, with her cheap labour and vastly improved mechanical resources, will be a formidable com-

¹ About eight per cent of the income has not been classified under any of these categories.

petitor for world markets; second, if it is necessary for India to compete in a larger degree for world markets in order to raise her standard of living, and perhaps to import more food, she is perfectly justified in doing so (heaven knows there is a lot of leeway to make up); third, India will hardly double her food output without some form of collective farming, which will also release labour for industry, though perhaps not so much labour as in Russia. Moreover, the soil of India is not necessarily so adaptable for collective farming as in Russia. It is unsuitable for permanent 'chemical fertilization', and I do not know where natural compost is to come from unless the immemorial fuel of India—cow manure—is mixed with it. Both this and the elimination of the Bania, the money-lender of the districts concerned, are problems of the greatest difficulty—perhaps not insuperable—but staggering at first-sight to an old-stager.

So far as I have been able to judge, I think the reaction to the Plan in well-informed quarters is very similar to my own, and I would only add that under the terms of the Atlantic Charter the new balanced economy of India will have to fit into an international pattern, and that we have learned from bitter experience that the greatest benefactor of the human race is certainly not he who manufactures two articles when only one, and perhaps none at all, is required. In the main, however, I have a warm regard for India's effort to realize her wholly admirable aims.

Conclusions

I put my suggestions rather dogmatically, but merely for brevity's sake. Unlike a certain writer on garden paths, I know that I am not the legal authority for pronouncing a 'Verdict on India'.

(1) Hitherto I have tried only to give facts, figures, and reasonable inferences from them. I must begin my conclusions by a few remarks about occultism, the doctrine of hidden mysteries, as in theosophy, alchemy, astrology, magic, etc. Vast numbers of Indians of all classes profoundly believe both in occultism and in the existence of evil spirits from whom they protect themselves by certain devices and customs. Whether as a result of this belief or not I do not know, but there are forces working in India, spiritual, metaphysical, or what you will, which I cannot define. Every experienced and sensitive person

knows that they are there, and I believe India is unique in this respect. At any rate, I have never felt them elsewhere; and it is fatal to despise or under-rate India's psychic background.

(2) I do not think that the creation of any physical or political barrier, nor, indeed, of any form of Dominion Status, will have any appreciable effect on these hidden influences, the power of which has to be experienced before it can be realized. What is required is a new wave-length in the human receiver, reaching out to new international influences.

(3) India must, in fact, tune-in to international economics, not internal politics. That, I believe, is the key to the problem. It entails a sublimation of passionate political feeling into a dispassionate study of all-India needs.

(4) The study should be founded on the basic fact that (although it was at one time divided by the sea south of the Himalayas), geographically, economically, and internationally, all India is One. To split the country into regional groups with separate Governments is to admit failure, to lower India's prestige, to reduce India's economic potential, to invite endless internal friction and strife, and most probably to perpetuate some form of foreign government at the centre, over which the whole political squabble will start *de novo*.

(5) The Indian States should contribute their own proposals to the national Plan and ultimately carry them out. They will retain their constitutional rights, adjusting their legal codes to an all-India standard, and conforming generally to the national pattern in economics, politics, and administration. Throughout India, moreover, there will have to be a severe searching of hearts over existing legal systems. For example, the Courts have the greatest conceivable difficulty in sifting contradictory evidence....

(6) India's own representatives should go to the post-war conferences as a single unit and should adapt their economic Plan with as little modification as possible to the balanced world economy visualized in the Atlantic Charter. This united front is essential; it will be a great binding force among them.

(7) There is reason to suppose that part of the above programme is already in progress, but its final shape must have the explicit approval of representative Indians.

(8) When the final Plan is agreed upon the Services must be reorganized to meet the changed conditions. The Secretariats

especially will have to be remodelled after a different fashion so that selected business and professional experts are available for minuting and sharing in decisions. The present office system is intolerable and would wreck any plan, however admirable.

(9) It is unwise to dwell upon difficulties, as for example: suppose the parties will not agree? *The parties will have to agree.* That is the literal truth. The war has set up an entirely new situation and India cannot afford to remain outside an international organization which is settling world affairs, not even to please the most extreme partisans. There are two paths open; one leads to cultural eminence and economic prosperity, the other to racial disruption and disaster.

(10) And what part will Britain play after all this? That, too, will be decided by events. Who can tell at this stage? It is like trying to solve an equation without knowing the value of any of the factors, and this question and answer show up very clearly the absurdity of trying to divorce economics from politics. What we really desire is a world in which politics and industry will be co-ordinated with an agreed economic policy. It is that policy which will decide if the British are necessary in India, and if not, when they should leave. What competent authority would choose its partners and staff before settling its defence and economic plans? This, I submit, in all humility, is the immediate answer to India's problem. The demand that the British should leave India at once has no foundation in reality.

Let me quote finally a paragraph from *Russia and the Peace*, by Sir Bernard Pares.¹ I shall alter only one word, substituting 'India' for 'Russia':

'Realities of this kind make it impossible that we should give play to political preferences; least of all could we listen to the suggestion that we should let this war lead on to a quarrel with *India*. We shall stand up to her, and we shall expect her to do the same to us, but we shall seek a solid and workmanlike solution—based on serious and sympathetic study—for every problem that may face us. We shall explore the possibilities of every kind of co-operation profitable to both sides in our post-war relations; and the enormous tasks of reconstruction with which *India* will then be dealing will give us the most practical means of proving to her that her partners in war are also her friends in peace.'

¹ The Macmillan Co., New York (1944). \$2.50.

CHAPTER TWENTY-TWO

RELIGION

Sri Aurobindo and his Exposition of Modern Hinduism
(Written in 1949/50)

I

SRI AUROBINDO GHOSE is a wise man of the East who has sought to compass universe and eternity in one supra-global conception. Like all creative workers he assimilates and translates, a process described adequately enough in Bertrand Russell's *History of Western Philosophy* (p. 145):

When I write a book on some subject, I must first soak myself in detail, until all the separate parts of the subject-matter are familiar; then, some day, if I am fortunate, I perceive the whole, with all its parts duly inter-related. After that, I only have to write down what I have seen. The nearest analogy is first walking all over a mountain in a mist, until every path and ridge and valley is separately familiar, and then, from a distance, seeing the mountain whole and clear in bright sunshine.

This experience is familiar to all creative workers, and an interesting parallel may be drawn from civil engineering. There are few problems so complex as that of the creation and successful maintenance of a harbour across or behind the foreshore line. Every case demands a characteristic solution—just as there is but one solution to a jig-saw puzzle. The pieces of this puzzle, which the harbour engineer must discover for himself, are the component parts of all the natural forces which play upon that part of the coastline now, and which may play upon it later, either by the construction of the harbour itself or by any possible combination of natural forces not immediately apparent. Thus he determines the interplay of tidal and fluvial waters, of wind-wave and ground-swell, of alternate periods of coast erosion and accretion, of contending littoral drifts and secular changes, of alluvial deposits, and the contour changes above and below sea level. All

EPILOGUE

these are linked up with the records, centuries old perhaps, of rainfall, wind (forces and directions), exceptional storms, cyclones, earthquakes and sea-quakes, of temperatures, maximum floods and tidal currents, of geological changes, and other exceptional phenomena. It is within this global perspective of natural forces that the harbour engineer must cunningly trace what nature is willing to permit, and will even help to perform, at that particular point on the earth's surface; and to this end he must seek the ultimate sources of tidal and wave energy, of rivers and soils, of ground-swell and ocean drifts from earth, sea, and sky alike.

Sri Aurobindo's material is not physical but the metaphysics of India. He has soaked himself in the *Rig Veda*, the *Upanishads*, and the *Bhagavad Gita*; doubtless he gained much from his fourteen years' experience of Western life and thought in England; his excursion into Indian politics and his enforced leisure in an Indian jail probably gave him much food for reflection. The *Gita* itself is undated and may belong to the early Christian age, though a more ancient origin has been claimed with some degree of plausibility. As to this Sir Edwin Arnold, in the preface to his poetic translation, *The Song Celestial*, says:

The weight of evidence, however, tends to place its composition at about the third century after Christ; and perhaps there are really echoes in this Brahmanic poem of the lessons of Galilee, and of Syrian incarnation.

As is well known, controversy has arisen between Indian pandits and European missionaries on this point, the parallelisms being close, even verbally; but, whether or no, the fact remains that in absorbing the *Gita* Sri Aurobindo seems to have absorbed much Christian teaching with it. His great work, *The Life Divine*, gives the impression one receives when turning a large globe in all directions, trying to find a beginning and an end; and though there is a pattern and a sequence, there is not, as in other surveys, a datum line or a measured base from which to start a trigonometrical survey by astronomic triangulation. But, just as we use the equator as the zero of latitude, and Greenwich as that of longitude, so the suprasphere of the Life Divine must have some guiding lines though in truth its equator is at any maximum

points of the globe and its Greenwich a finite point of an infinite Whole.

Thus the reading of *The Life Divine* is like the turning of a globe wherein, rightly understood, is all there is to know and no part is greater or less than another, and all is one. But the image is complicated by the fact that the observer is also in a process of revolution; for his mind, if informed on the physical cosmos, must analogize his knowledge into a new language, or, if informed on the theological side, must recast his dogmas into new forms and patterns; and this, I daresay, will come unwillingly to many theologians, whereas the hopeful student of nature and life may leap to embrace the Substance of Reality which he instinctively recognizes.

II

Here is what we know of Sri Aurobindo Ghose:

Born of educated forbears in Western Bengal 1872. Educated at Loretto College, Darjeeling, at St. Paul's, London, and King's, Cambridge. Showed brilliant gifts as a classical scholar. Spent fourteen years in England. Published much poetry. Sought new expressions of old truths by which India would find new birth. Turned to politics in 1906 at Calcutta. Influential Congressman. Went to jail for 'political' offences. Studied the *Bhagavad Gita*. Retired in 1910 to Pondicherry via Chandermagore, in French territory (south-east coast of India). Studied Yoga. Published *The Arya*, a journal of philosophy, until 1921. Wrote continually, using much material later in *The Life Divine* and other works. Publishers, chiefly the Arya Publishing House, Calcutta, twenty-four volumes in all; religion, philosophy, poetry, and miscellaneous. Published of him, in this country, *Sri Aurobindo, Indian Poet, Philosopher, and Mystic*, by Professor G. H. Langley (former Vice-Chancellor, University of Dacca, East Bengal), issued by the Royal India and Pakistan Society, 3 Victoria Street, London, S.W.1. Foreword by the Marquess of Zetland, K.G. (President of the Society).

The particulars given above are taken from Professor Langley's informative book, which also provides a pen sketch from *The Times Literary Supplement* of the head of Sri Aurobindo large-featured, hirsute, with glowing eyes.

Before proceeding to describe his message as well as I can in so

EPILOGUE

short a compass I may perhaps quote from two of his poems which, I think, give a clue to his outlook.

OCEAN ONENESS

Silence is around me, wideness ineffable;
White birds on the ocean diving and wandering;
A soundless sea on a voiceless heaven—
Azure on azure—is mutely gazing.

Identified with silence and boundlessness
My spirit widens, clasping the universe
Till all that seemed becomes the Real,
One in a mighty and single vastness.

Someone broods there nameless and bodiless,
Conscious and lonely, deathless and infinite,
And, sole in a still eternal rapture,
Gathers all things to his heart for ever.

Secondly, inspired perhaps by an Eastern sunrise, where the unbroken sea meets an opalescent sky:

My soul unhorizoned widens to measureless sight,
My body is God's happy living tool,
My spirit a vast sun of deathless light.

The teaching is horizon-like in its boundaries. Sri Aurobindo does not construct straight Roman roads, ruthless in efficiency and dotted with milestones; he winds his way round slow contours, resting at the view-points, looking back at the past, and forward to whatever goal there may be. Often he makes one pause and envy the timeless East and its patient pilgrims.

There are two parts to *The Life Divine*, the first of 441 pages and the second (bound in two volumes) of 1,186, three volumes in all. Here is his point of departure:

The earliest pre-occupation of man in his awakened thoughts and, as it seems, his inevitable and ultimate pre-occupation—for it survives the longest periods of scepticism and returns after every banishment—is also the highest which his thoughts can envisage. It manifests itself in the divination of Godhead, the impulse towards perfection, the search after pure Truth and unmixed Bliss, the sense of a secret immortality. The ancient dawns of human

knowledge have left us their witness to this constant aspiration; to-day we see a humanity satiated but not satisfied by victorious analysis of the externalities of Nature preparing to return to its primæval longings. The earliest formula of Wisdom promises to be its last—God, Light, Freedom, Immortality.

This seems to reflect the *philosophia perennis* of the sixth century B.C. before which there are no written records of Indian religions. They *date* from a remoter age. Nevertheless, he says, it is true that,

to the ordinary material intellect which takes its present organization of consciousness for the limit of its possibilities, the direct contradiction of the unrealized ideals with the realized fact is a final argument against their validity. But, if we take a more deliberate view of the world's workings, that direct opposition appears rather as a part of Nature's profoundest method, and the seal of her completest sanction.

For, as he goes on to say,

All problems of existence are essentially problems of harmony. They arise from the perception of an unsolved discord, and the instinct of an undiscovered agreement of unity.

It is from these two paragraphs that the vast content of his thought derives its source. Man is given innate Wisdom; but he must find it in the conflict of opposites until unity is born; and this is the key to life. All knowledge and experience is complementary and man becomes Man by knowing God and achieving oneness with man: with which dictum we may reasonably compare those two Christian Commandments which are 'greater than all'.

III

This, then, is the first subject in the Aurobindo philosophy, but he heads the chapter with quotations not from Psalm 139 and the two Great Commandments but with two passages from the *Rig Veda*, typically Eastern in their metaphysical content. There follows a developing passage through the materialistic and ascetic negations of the human aspiration towards Reality, and so

EPILOGUE

to the omnipresence of Reality, and the destiny of the individual and his place in the universe. Here are two key passages:

We start then with the conception of omnipresent Reality of which neither the Non-Being at the one end nor the universe at the other are negations that annul; they are rather different states of the Reality, obverse and reverse affirmations. The highest experience of this Reality in the universe shows it to be not only a conscious Existence but a supreme Intelligence and Force, and a self-existent Bliss; and beyond the universe it is still some other unknowable existence, some utter and ineffable Bliss. Therefore we are justified in supposing that even the dualities of the universe, when interpreted not as now by our sensational and partial conceptions, but by our liberated intelligence and experience, will be also resolved into those highest terms. . . . This creed is given, indeed, to humanity to support it on its journey, until it arrives at a stage of development when faith will be turned into knowledge and perfect experience, and Wisdom will be justified of her works. (Vol. I, chap. 4, p. 49.)

It will be understood again that this familiar conclusion is not derived from Christianity but from Hindu sources, of which one is quoted at the head of Chapter 4:

If one knows Him as Brahman the Non-Being, he becomes merely the non-existent. If one knows that Brahman Is, then is he known as the real in existence. (*Upanishad II. 6.*)

All Sri Aurobindo's writings combine a singular quality of poetic thought with logical exposition, and at this point, as a rider to the above, I cannot do better than quote from Professor Langley's book (pp. x, xi, Author's Preface):

. . . closely allied with Aurobindo's endeavour to reinterpret the Hindu conception of the essential union of the individual with the Infinite is the contribution he makes dispelling what he regards as a widespread error in the interpretation of this conception and the experience from which it arises, whether such misinterpretation be by Eastern or by Western thinkers. The fundamental oneness of the subject in personal consciousness with the Supreme Consciousness is frequently interpreted as entailing the final immersion of the individual in the Infinite with which it

COCHIN SAGA

is one, and consequently the eventual loss of personality. Western thought and feeling are characterized by a deep sense of the value of personal independence and freedom, and naturally find repugnant any way of thinking that fails to support personal worth. Aurobindo also possesses this deep sense of the value of the individual. *At the same time he tries to show that the distinctness and worth of persons as persons and their essential union with the Divine are not incompatible conceptions.* On the other hand, he maintains that individuals grow and develop their natural worth only in so far as they enter into enjoyment of their union with the Divine. *The individual consciousness is not merged into the Infinite but is the highest manifestation of its creative power.*

This seems to me to be an expressive and admirable summary of one of the most important aspects of *The Life Divine*. Its apparent rejection of Nirvana and its relationship with practical mysticism, neo-Platonism, and the Christian life itself will be immediately obvious, and we may, I think, regard it as the second great subject or motif in the book. This, and the first already mentioned, are powerful links with Western Christianity, and the fact that they have been forged from the precious metals of Hindu metaphysics is doubly corroborative, probably conclusive. In Sri Aurobindo's own words:

The ascent to the divine Life is the human journey, the Work of works, the acceptable Sacrifice. . . . This, Truth, that has to emerge out of the phenomenal world's contradictions, is declared to be an infinite Bliss and self-conscious Existence, the same everywhere, in all things, in all times and beyond Time, and aware of itself behind all these phenomena by whose intensest vibrations of activity, or by whose largest totality, it can never be entirely expressed or in any way limited; for it is self-existent and does not depend for its being upon its manifestations. They represent it, but do not exhaust it; point to it but do not reveal it. . . . It becomes itself in the world by knowing itself; it knows itself by becoming itself. (Vol. I, chap. 6, p. 66.)

IV

In searching for a third motive relative to and proceeding from the first and second, one must traverse a long stretch of the winding road, a task exacting much mental toil and patience. Here are some of the signposts as we slowly pass them by: the

EPILOGUE

Ego and the Dualities, the methods of Vedantic knowledge, the pure Existent, delights of Existence, the super-mind as Creator, The Divine Soul, the ascent and problem of life, the ascending series of Substance, the seven-fold chord of Being, the Super-mind, Mind, and the Over-mind Maya. The fact is that every link in this chain of reasoning seems to possess equal importance with the rest from a strictly logical point of view, and yet, at the same time, one's imagination, if it is fed by poetical and spiritual apprehension, instinctively leaps to its goal, which is the God-consciousness. Thus we are not surprised when on reaching the last chapter of Volume I (No. 28) we discover these four graphic texts:

There is a Permanent, a Truth hidden by a Truth where the Sun unyokes his horses. The ten hundreds (of his rays) come together—That One. I saw the most glorious of the Forms of the Gods. (*Rig Veda* V. 62, 1.)

The face of Truth is hidden by a golden lid; that remove, O Fostering Sun, for the Law of the Truth, for sight. O Sun, O sole Seer, marshall thy rays, gather them together—let me see of thy happiest form of all; that Conscious Being everywhere, He am I. (*Isha Upanishad*, vv. 15 and 16.)

The Truth, the Right, the Vast. (*Athara Veda* XII, 1, 1.)

It became both truth and falsehood. It became the Truth, *even all this that is*. (*Taittiriya Upanishad* II, 6.)

It is extremely difficult to put into simple prose what is contained in these quotations, especially the last. Very briefly and inadequately we may say that ignorance evil and strife are all parts of truth, not illusion. Yet, beyond and above all:

There is still the unknown, underlying Oneness which compels us to strive slowly towards some form of harmony, of interdependence, of concording of discords, or a difficult unity. But it is only the evolution in us of the concealed superconscious powers of cosmic Truth and of the Reality in which they are one that the harmony and unity we strive for can be dynamically realized in the very fibre of our being and all its self-expression, and not merely in imperfect attempts, in incomplete constructions, and

ever-changing approximations. The higher ranges of spiritual Mind have to open upon our being and consciousness, and also that which is beyond even spiritual Mind must appear in us if we are to fulfil the divine possibility of our birth into cosmic existence. (Vol. I, p. 435.)

Nothing could be finer than the Marquess of Zetland's summary of these conclusions on page viii of Professor Langley's book:

God-consciousness is a stage in the spiritual progress of man which has its analogies on the lower planes of existence, *for just as life appropriates and utilizes matter, and mind appropriates and utilizes life, so in the life Divine does spiritual consciousness appropriate and transform mind.* It is this stage which man must strive to reach if his long pilgrimage on earth is not to be brought to naught.

When we reach the two volumes which form Part II, and make a reconnaissance survey of their contents, we find what appears to be a serious attempt to apprehend the infinite in finite terms, for the first quotation, under the general heading of Indeterminates, Cosmic Determinations, and the Indeterminable is the following verse 7 of the *Mandukya Upanishad*:

The Unseen with whom there can be no pragmatic relations, unseizable, featureless, unthinkable, undesignable by name, whose substance is the certitude of One Self, in whom world-existence is stilled, who is all peace and bliss—that is the Self, *that is what must be known.*

To a practical mind this seems a contradiction in terms, but the mystic would at once recognize its truth, for it is his constant lament that he cannot convey what he has seen and known. The whole of Part II derives from this apparent contradiction and proceeds in leisurely stages, not along a road, but as an Indian river, gliding easily past recognizable features: the Eternal and the Individual, the Divine and Undivine, the Cosmic Illusion, Reality and the Cosmic Illusion. Thence to Ignorance, its boundaries and origin, its relation to the Consciousness force, its connections with falsehood, error, wrong, and evil. At this point the river, as it nears the ocean, gathers speed and, by the assimilation

of its tributaries, opens upon Reality and the integrated knowledge, the evolutionary process of ascent by integration, the philosophy of rebirth, the ascent towards super-mind, the Gnostic being and the Divine Life. It will be realized that such a conception can hardly be summarized. The connecting links are extremely gradual, and the best I can do is to photograph the river and its banks at a few of its major features.

V

The opening of Part II starts with an examination of consciousness in relation to knowledge and ignorance:

A consciousness-Force, everywhere inherent in Existence, acting even when concealed, is the creator of the worlds, the occult secret of Nature. But in our material world and in our own being consciousness has a double aspect; there is a force of Knowledge, there is a force of Ignorance. In the infinite consciousness of a self-aware infinite Existence, knowledge must be everywhere implicit or operative in the very grain of its action; but we see here at the beginning of things, apparent as the base or the nature of the creative world—energy, as Inconscience, a total Nescience. This is the stock with which the material world commences: consciousness and knowledge emerge at first in obscure infinitesimal movements, at points, in little quanta which associate . . . there is a tardy and difficult evolution . . . more and more gains are written in the blank slate of the Nescience.

'A Consciousness-Force operating on a blank slate.' The Christian would say 'In the beginning was Mind, or Word'. A little further on he says:

The first aspect of cosmic existence is an Infinite which is to our perception an indeterminate, if not indeterminable. In this Infinite the universe itself, whether in its aspect of Energy or its aspect of structure, appears as an indeterminate determination, a 'boundless finite'—paradoxical but necessary expressions which would seem to indicate that we are face to face with a suprarational mystery as the base of things.

All this, of course, may seem vaguely familiar in other terms, as for example in the ideas of Immanence and the Aristotelian and Stoic philosophy, or in Bruno and his master idea of unity, or in

Spinoza and his dictum 'God and the processes of Nature are one', or his conception of an underlying Reality, or *Sub-stance*. In fact the whole of this volume may be regarded as a new version of Spinoza's (and other philosophies) if we see it as a wide dissertation of Spinoza's creative sequence: 'survival-necessity' determines instinct, instinct determines desire, desire determines thought, and thought action. But for Spinoza, 'desires vary with dispositions', and this introduces the sequence of ignorance, intelligence, and morality, in which is derived the reconciliation of opposites as necessary processes of moral evolution.

And this from Sri Aurobindo himself:

The first and the highest are truth; in the middle there is falsehood, *but it is taken between the truth on both sides of it, and it draws its being from the truth.*

So the author reaches his final theme: true Self is to be won by the Truth and by an integral knowledge (*Upanishad III, 1, 5*):

Ignorance is a separation of the being from its own integrality and entire reality; its boundaries are determined by this. . . . The integral knowledge is something that is already there in the integral Reality. . . . it must be discovered or uncovered. . . . An integral Spiritual consciousness carries in it a knowledge of all the terms of its being; *it links the highest to the lowest through all the mediating terms and achieves an indivisible whole.*

In his final chapter, 'The Divine Life', the author lays bare the superficiality of a life inspired by a surface consciousness and its inevitable consequences:

Reason and Science can only help by standardizing, by fixing everything into an artificially arranged and mechanized unity of material life. A greater whole-being, whole-knowledge, whole-power is needed to weld all into a greater unity of whole life. (p. 1,162.)

That is as far as we need go here. It is a conclusion which is slowly being reached by every branch of thought, East and West, and it is confirmed by every day's experience throughout the whole world. Our material castles in the air are tottering storey by

storey, and there is as yet no voice great enough to sound above the political and economic clamour.

VI

I have tried to give briefly the drift of Sri Aurobindo's teaching in his own words as proceeding from his particular gifts, his qualifications of education and experience, and from his great powers of assimilation and re-expression. What is its particular reference to the earliest records of Christianity?

(1) Both he and Jesus the Christ became God-conscious through mystical communion; both perceived that God Is, and that He is Infinite Divine Personality; that man was created with a Divine inheritance and that he accepts or rejects this inheritance by becoming or not becoming God-conscious; that God-consciousness is derived from direct communion and from experience of life, the first largely in retirement and stillness, the second largely in the world of action. Through God-consciousness man himself becomes an immortal consciousness. Each proclaims the truth that 'in my Father's house are many mansions', though not in the same words.

(2) Direct communion through mysticism is a gift which, like all gifts, needs cultivating. Many have it; most have not, though they may and do have an instinctive 'awareness'. For those who cannot achieve direct knowing there is a way of life which is implicit in Sri Aurobindo and explicit in Jesus; but in Jesus, this way is dependent on making first an act of faith and *believing* that God Is. The revelation of this truth then comes hand in hand with experience of a life guided and controlled by the *Word*, which, with Sri Aurobindo, is based chiefly, I think, on parts of the *Baghavad-Gita*, and with Christianity on the immortal teaching of Jesus. In each case the issue is the sacrifice of self in the journey of life. Between Krishna and Arjuna it arose over a discussion of war; between Christ and man it arises over the struggle of man with himself and his circumstances.

(3) With Sri Aurobindo, ignorance, error and sin are necessary parts of experience unless and until men turn to Light by revelation, faith, or experience. With Jesus, the words 'thy sins be forgiven' were the response to a witness of faith which, if truly believed, begins a healing process of mind and body.

(4) The significance of Sri Aurobindo to-day is threefold:

(a) he is a man of brilliant parts, of experience, culture, and character, who for forty years has given himself to meditation and communion, and has published his findings;

(b) those findings, arising from the study of his country's own sacred literature, resemble a judge's summing-up (in 1,627 pages of close reasoning) of the mysteries of life, death, and re-birth;

(c) in the end, and implicitly if not explicitly, they reveal Jesus: the Founder of Christianity, the manifestation on earth of the Word, the Sacrifice of self, the Rebirth, and 'The Life Divine' Itself.

Sri Aurobindo, the Mystic, Realist, and Hindu Modernist, knowingly or not, has thus helped to unveil the central Christian Belief, and has so rendered possible a spiritual *rapprochement* between East and West which, sooner or later, may have incalculable consequences.

CHAPTER TWENTY-THREE

THE STORY OF 1941-1958

The latest phase of the Cochin Saga

My deputy, Mr. A. G. Milne, took over from me a day or two before I retired, and soon found himself busy with the urgent extension of the 'fourth-stage' works and an enormous programme of defence measures for the combined Services, including the development of large areas allotted to the Royal Navy as well as the Royal Indian Navy. In addition, the aerodrome was completed and later enlarged. The long oil-jetty was built for naval use, and farther south on Venduruty Island the Royal Navy were building the landing-craft for the invasion of Japan. In stream and alongside new wharves there were over a hundred mooring berths, in addition to several buoys for seaplanes and two deep-water berths alongside wharves for aircraft carriers. Between them, Milne and Fletcher (the Port Officer), and the Harbour-master, Alan Sheppard, must have been occupied more or less day and night; Cochin owed more to them than I think was realized at the time.

The trade of the port was by no means stationary; it increased both during the War and afterwards. When I left in 1941 it had barely reached one million tons, but after the War the figures rose as follows:

In 1948-9	.	.	.	1,242,285 tons;
In 1950-1	.	.	.	1,347,178 tons;
In 1951-2	.	.	.	1,580,847 tons;
In 1955-6	.	.	.	1,608,687 tons;
In 1956-7	.	.	.	1,800,000 tons, or thereabouts.

This growth and the rapid increase in oil imports, which of course add proportionately more weight to the goods-tonnage, have decided the policy of the present Government of India, which is to press forward with the development of Willingdon Island on the original lines, which in 1930 were to provide for an

ultimate maximum of four million tons in forty years, and two million tons in twenty years, the basis of the estimate in 1934-5 for the division of Customs dues. These estimates were based on little more than professional prophecies, but the facts so far seem to confirm them.

The present Administrative Officer, Shri M. S. Venkataraman, and his Chief Harbour Engineer, Shri Venkateswaram, together with the other officers of the port, are now hastening forward the construction of further wharves and godowns as well as the provision of rail and other equipment in pursuit of the aim to reach four million tons of traffic within the next twenty years or so. Financially, so far as I can judge, the finance of the port is in a fairly strong position and it is possible to put aside fourteen per cent. of the total receipts annually to reserve.

Incidentally, the present very capable Administrator was trained in the port of Madras under Sir G. G. Armstrong, and the Chief Engineer first in my own drawing office before going on to the Junior Executive Staff. He was always cautious and thorough in his work, qualities which I believe he brings to everything he undertakes in his highly responsible post.

It is now nearly thirty-eight years since I was appointed to develop Cochin, and it has always seemed strange to me that a place of such political and economic value, to say nothing of its historical interest, is so little known in this country. In April 1957, however, a Press Report was published in Devon and Somerset, and possibly elsewhere, describing part of its history and what is happening there now with the object of 'developing the natural harbour at Cochin into a major port to serve India'. This Press Report, with its big capital headline, INDIA DEVELOPS ANCIENT PORT, is inaccurate in other ways: for example, it reports the present Administrative Officer as saying, 'Our ultimate aim is to provide facilities to handle forty million tons of cargo a year'. 'Forty' million, observe, not four. And nowhere is there mention of its British conception, design, and control in its birth and growth. I do not suggest that there was any intention to 'soft pedal' the British origin of the 'new port'; but, as it reads, and from its evidence, considered as history, the British had nothing to do with it. But now—compare this English Press statement with the Editorial in the *Times of India* dated 4th August, 1936, under the title 'A Great Project', twenty-one years previously:

EPILOGUE

'Those who have laboured with energy and enthusiasm ever since 1920 to give India a first class port at Cochin received during the week-end the final reward of their work. What is beyond doubt the most beautiful harbour in India *has been declared a Major Port by the Government of India*. . . .' (italics mine).

And here is a notice published in the London *Daily Telegraph* of 30th May 1958:

'The British Mission, led by Mr. James Lanagan, which has been asked to inspect and recommend sites for a second Indian ship-yard, has expressed a marked preference for Ernakulam, in Cochin. . . . The estimated cost of the project ranges between £13 million and £15 million.'

BIBLIOGRAPHY

C. Raymond Beazley, M.A., F.R.G.S.: *The Dawn of Modern Geography* (John Murray)

Pliny VI 17; Heyd, *Commerce du Levant* I. 4, 5

R. H. Major: *India in the Fifteenth Century* (Proceedings of the Hakluyt Society, first series, No. 22)

Colonel Wilks: *Historical Sketches of South India*

Cosmas: J. W. McCrindle: *Early Geography of India*

Periplus Maris Erythraen (British Museum)

E. H. Warmington: *Commerce between the Roman Empire and India* (British Museum)

G. M. Theal: *Portuguese in South Africa* (Cape Town Library)

E. Z. Prestage: *The Portuguese Pioneers* (Cape Town Library)

Whiteway: *Rise of Portuguese Power in India* (Cape Town Library)

Sir W. W. Hunter: *The Indian Empire*

K. M. Pannikar: *Malabar and the Portuguese*, and *Malabar and the Dutch* (two books)

Messrs. Galletti (I. C. S.) and Vanderberg (S. J.): *Excerpts from the Dutch Records in Madras* (Cape Town Library)

Cambridge History of India, Vol. 5

Encyclopædia Britannica (1929 Edition)

C. M. Grousset: *Civilisations of the East: India*

F. S. Davies: *Cochin* (Published in Cochin)

B. V. K. Menon, B.A., B.L.: *Census of India, 1941*, Vol. 19 only

Various authors: Government Gazetteers, Minutes, Blue Books, State Records, historical and otherwise, too numerous to mention, and departmental files

Abbé Dubois: *Hindu Manners and Customs* (Revised Edition)

Various Archaeological Records and Photographs relating to the buried city of Mohenjo Daro

The Journal of the Royal India, Pakistan, and Ceylon Society

INDEX

ABRAHAM (Surveyor), 153
 Acharya, Sir Vijaya Ragahava, 88n.
 Adams, Robert, 45
 'Adams Bridge', 126
 Aden, 12, 15, 16, 24, 54. *See also* Arabia Eudaemon.
 Adulis, 12
 Adyar Club, 130
 Aiyar, Sir C. P. Ramaswamy, 162n.
 Albuquerque, Alfonso, 28, 36, 40
 Alexander the Great, 16
 Alfred the Great, 25, 49
 Alleppey (ancient Porkad), 54, 129, 139, 183
 Almeida, Don Francisco de, 28, 35–6
 Amphora. *See* Talent.
 Anderson, Sir John, 74
 Anderson, W. T., 81, 90–2, 109
 Anjengo, 44
 Antioch, 3
 Arabia, its exports to Rome, 19
 Arabia Eudaemon (Aden), 12
 Armstrong, Sir C. G., 254
 Arnold, Sir Edwin, *The Song Celestial*, 231, 241
 Art, periods in. *See* Periods in art.
 Aspinwall, J. H., 56, 57
 Atherton, J. H., 164
 Atlantic Charter, 237
 Augustine, St., 13
 Augustus, Emperor, 13, 16
 Aurobindo Ghose, Sri, 223; exposition of Modern Hinduism, 240–52; life of, 242
 Azores, 28
 Back Bay scandal. *See* Bombay.
 Baddeley, Sir Vincent, 74
 Baghdad, 3
 Bandar-Abbas, port of Ormuz, 12
 Bappoo Khan, 124
 Barbaricon, 12
 Baroda, 229; Gaekwar of, 113
 Barros, João de, 27
 Bartolomeo, Fra, 39
 Barygaza, Gulf of Cambay, 12
 Basra (Charax), 4
 Batavia, 43, 47
 Becare, 18, 19
 Bell, Mr., of Chittagong, 58
 Berenice, 12, 15
 Besant, Mrs. Annie, 78
Bhagavad-Gita, 231, 241, 251
 Bhore, Sir Joseph, 198
 Bibby Line, 204
 Biccu Baloo, Khan Sahib, dredging master, 124
 Black Death, 26
 Boag, Sir George, 162n.
 Bolghatty, 48, 94
 Bombay, 54, 57, 77–8, 107, 190, 191; the 'Back Bay scandal', 162, 167; industry and commerce, 234
 Bombay Plan, 236–7
 Bradlaugh, Charles, 78
 Bristow, Sir Robert: appointed to harbour duties in Madras Presidency, 60, 69–70; illness, 69; at Malta Dockyard, 70–1; takes examination, 71; doubts about going to India, 71–4; on National Whitley Council, 74; other experience, 75; decides to

INDEX

go to India, 75-6; first impressions of India, 77; in Bombay, 77-8; arrival in Madras, and sees Lord Willingdon, 77-8; and the Chief Officer of the P.W.D., 79-80; first visit to Cochin, 80-6; tentative proposals for port, 87; interviews with Chief Minister of Cochin, and others, 88 *ff.*; in Ootacamund, 100, 113-14; and the Finance Minister, 111-12; and the rival project of Tuticorin, 114-16; difficulties with governmental machine, 116-18; and the creation of a new Marine Department, 119-20; visits Calicut, and witnesses Moplah Rebellion, 120-2; and trouble with a Moslem crew, 122-4; and the representative of British dredging contractors, 125-6; and the proposed canal through Rameswaram Island, 126, 128-9, 131-6; visits to east and west coasts, 129; increase of staff and activities, 129-30; social life at Ootacamund, 136-8; and incident of woman and baby in the train, 144-7; conversation on future of India, 147-9; and the angry crowd at Chinapatna, 149-50; his work justified by the Consulting Committee's Report, 151-9; appointed Harbour Engineer-in-Chief, 157; on leave after confirmation of four-party agreement, 160-1; and changes in the Civil Service, 161-2; forebodings of opposition, 162; and incident with his wife's medicine, 163,

164; and the abandonment of the Tuticorin project, 168-9; on leave after breakdown in health, 171-2; acute neurasthenia, and prolonged rest, 173-6; social life in British Cochin and Ernakulam, 192-4; builds a house, 197; on leave, 203-4; Administrator of Cochin Port, 204-5; at Coonoor and Willingdon Island during the War, 209-12; transfers his office to Madras, 212-15; and food in India, 215-16; and household accounts, 216-17; Naval Officer-in-Charge at Cochin, 218; thoughts on Indian problems, 237-9

British Cochin (former name for Cochin Port), 81

Brown, Dr. J., 207

Browning, G. E., 58

Bruno, Giordano, 249

Bullen, Captain, of the *Padma*, 170

Bunning, Stuart, 74

Burkitt, H. H., 122*n.*

Byzantium. *See* Constantinople.

Cabot, John, 49

Cabral, Pedro Alvarez, 31-3

Calcutta, 57, 190, 191, 234, 235

Calicut, 24, 31, 33, 54, 129, 180; Vasco da Gama at, 30; Cabral at, 32; bombarded by Almeida, 35; the English in, 44; attacked by Travancore, 46; situation, 120-1

Campbell, Alan, 58

Candle Island, 81

Cannanore, 34, 129

Caravan routes, 3-4; travellers subjected to robbery and violence, 4, 6; slowness, 6

INDEX

Caravanserais: meeting-places for travellers, 3, 6; Petra, 3
Castor, Captain, 51, 55
Ceylon, under the Dutch, 43
Chancellor, Richard, 50
Charlemagne, 24
Chetty, Sir Shunmukham, 65, 201
Chetwai, 48
China, periods of art in, 10
Chinapatna, 149
Cocanda, 129
Cochin Chamber of Commerce, 56-8, 61, 81, 101, 187, 195
Cochin Port: possibly visited by da Gama, 31; Cabral's arrival at, 33; Portuguese settlement of, 33-6; Portuguese ousted from, 36-8, 42; under the Dutch, 41-8; the Narakal anchorage at, 51; its backwater system, 51-2, 139-41; coastal and backwater craft used at, 52-3; charts of, 53-4; natural advantages, 54; cheap trading at, 55; the social scene, 55, 141-5; British Cochin, 81

THE NEW HARBOUR

the agitation for a sheltered harbour, 55-9; Bristow appointed Harbour Engineer, 60; summary of progress of the work, 60-6; Lord Willingdon's support, 79, 107, 114, 117-19; situation, 81; Bristow's survey of the problem, 81-8; reactions of the Diwan of Cochin, 87-90; *ad hoc* Committee appointed, and its report, 100-1, 105-11; monsoon damage, 101-5; Government approval of first stage, 116; completion of experimental dredging work, 151, 153; report of the Con-

sulting Committee in London, 155-60; the four-forty agreement, 157, 160; arrival of new dredger, 160-1, 163; work of dredging and pipeline crews, 165-9; deep-water channel established, 169-71; political and administrative difficulties, 179-88; design of a combined township and port, 189-91; conferences of 1931-35, 194-6, 198-9; customs and jurisdiction problems, 198-202; the reclamation named Willingdon Island, 202-4; arrival of first Bibby Line ship, 204; appointment of Port Advisory Committee, 205-7; movement of the Narakal Mudbank, 207-8; in the early part of the War, 209, 217-20; during the years 1941-57, 253-5

Cochin State: Dutch governmental organization in, 43-4; European trade rivalries in, 44-5; attacked by Raja of Travancore, 45-6; and the Dutch agreement with Travancore, 46-8; and the new harbour at Cochin Port, 61, 65, 180-2, 198-202, 206; dynastic succession in, 88; marriage age in, 226; literacy in, 229; industry and commerce, 234

Cochin Musical Association, 192
Coelho, Nicolas, 32
Colombo, 54, 107, 115, 167, 191, 219
Columbus, Christopher, 27, 49
Constantine I, Emperor, 13, 23
Constantinople, 23, 26
Coode, Son, and Matthews, 58
Coonoor, 209, 210

INDEX

Craig, Gordon, 79n.
 Cranganur, 52. *See also* Muziris.
 Crusaders, 28
 Cruz Milagre, 83
 Cuddalore, 129

Daily Telegraph, 255
 Danashkodi, 144
 Danes, in Cochin, 45
 Davies, F. S., 39
 Davis, explorer, 50
 Diaz, Bartholomeu, 28, 29, 32
 Dickinson, F. G., 61, 87n., 102,
 108, 123, 143, 153, 167
 Diocletian, Emperor, 23
 Discordia Island. *See* Socotra.
 Diu, 36
 Drake, Sir Francis, 27, 50
 Du Cane, Lt-Colonel C. G., 207
 Duncan, J. H., 143, 153, 160, 163,
 167
 Dutch, the: first voyage to East
 Indies, 41; their East India
 Company, 41-3; coconut plan-
 tations, 141. *See also* Cochin
 Port; Cochin State.

 East India Company: Dutch, 41-
 3; English, 41, 43, 49-50
 East Indies, first Dutch voyage to,
 41
 Elagabalus, Emperor, 20
 Elizabeth I, 41, 50
Emden, 186
Enterprise, 56
 Ernakulam, 88, 89, 93, 94, 109,
 192-3, 255

 Ferdinand V, King of Spain, 34
 Field, Lt-Colonel Sir Donald,
 200
 Fisher, Sir Warren, 74
 Fitch, Ralph, 50

 Fletcher, Captain H. G. (Port
 Officer), 253
 Franciscans, in Southern India,
 39-40
 French, in Cochin, 45
 Frobisher, Martin, 50

 Gama, Vasco da, 29-34, 49, 60
 Gaza, 4
 Genoa, 24
 Gerrha, 4
 Goa, 36, 40, 42, 107
 Goēs, Damião de, 27-8
 'Golden Island', the, 19
 Goschen, Lord, 162, 166
 Graeco-Bactrians, in India, 11
 Greeks, in India, 16
 Grigg, Sir James, 200

 Hakluyt, Richard, 27
 Harding, Sir Edward, 223
 Hare Island, Tuticorin, 115-16,
 163, 166, 168
 Henry VIII, 49, 50
 Henry the Navigator, 28-9, 41
 Herbert, Sir Charles, 64, 182n.
 Hindu art, 11, 16
 Hinduism. *See* Sri Aurobindo
 Ghose.
 Hippalos, 15
 Holland. *See* Dutch.
 Hutton, Mr., 80, 83, 87, 96-100,
 110-12, 117, 119, 156
 Hyder Ali, 48

 Iberians, 27
 India: Hindu art, 11; penetrated
 by Central Asian peoples, 11;
 commercial penetration from
 the West, 11-12; the Mohenjo
 Daro civilization, 12; earliest
 sea route to, 12-13; trade with
 Roman Empire, 14; exports to

INDEX

Rome, 19–21; conflicts of states in the south, 25; adoption of the 'Malayalam Era', 26; Vasco da Gama's expedition to, 29–31; Cabral's voyage to, 31–3; Portuguese settlements in, 36–8, 42; Dutch settlements in, 41–8; marriage in, 226–8; education, 228–9; work and employment, 230–1; religion, 231–2; legislative structure, 232–4; industry and commerce, 234–6; the Bombay Plan, 236–7

Industrial Revolution, 53

Inland ports. *See* Caravanserais.

Irwin, Lord, 163

Isabella, Queen of Spain, 34

Islam, rise of, 24

Jaigarh (Karjar), 12

Jalarpet, 184

Jews: in Portugal, 39; in Cochin, 141

Joseph (cook), 212, 216

Kabul, 4

Karachi, 190, 234, 235

Karjar. *See* Jaigarh.

Kayamkulam, 45

Keen, B. A., 207

Kipling, Rudyard, 114, 149

Knapp, Sir Arthur, 113

Kolum, 18

Knights Templars, 28

Kolachel, 45, 46

Lakadive Islands, 16

Lanagan, James, 255

Langley, Prof. G. H., *Sri Aurobindo*, 242, 245–6, 248

Leverett, Mr. (Port Officer at Cochin), 58

Linlithgow, Lord, 192

Linschoten, Jan Huyghen van, 41

Lotus Club, 192, 193

Lutyens, Sir Edwin, 98–9

Madeira, 28

Madras, 54, 57, 107, 180, 181, 191, 212–13, 234

Madras Government: and the Cochin project, 60–5, 155, 157, 160, 180–3, 195; and the Tuticorin project, 168

Madras Port Trust, 184, 185

Madras and Southern Mahratta Railway, 184–5

Madurin Company, of Tuticorin, 115

Mahabharatas, 231

Major, Rev. Canon H. D. A., 223; *Basic Christianity the World Religion*, 232

Malabar Club, 121

Malabar Girl Guides, 193–4

Malayalam Era, 26

Mangalore, 54

Manoel I, of Portugal, 28, 29, 31, 35, 36, 39

Mappilahs. *See* Moplahs.

Marakanda, 3

Marta, 45

Martande Varma, Raja of Travancore, 45–8

Masulipatam, 129

Mauro, Frei, 35

Mecca, 49

Melinda (Malindi), 32

Menon, Mrs. A. N., 193

Menon, M. S., 218

Menon, Padmanabha, 192

Milne, A. G., 169, 170, 253

Mohenjo Daro civilization, 12, 16

Monsoon winds: law of, discovered by Hippalus, 15, 18; rediscovered by British, 51

INDEX

Moore, P. L., 119n.
 Moors, in Spain, 24, 27, 34, 42
 Moplahs, or Mappilahs (sect of Arab traders), 24, 29; their rebellion, 122, 149
 Morin, Colonel, 136
 Mozambique, 32
 Mudaliyar, Rao Sahib C. T. Sambandam, 201
 Muhammad, 24, 232
 Murray, Sir Oswyn, 74, 111
 Murugesan (butler), 211, 212
 Muttancherry, 55, 88, 189, 191
 Muza, 12
 Muziris, 16; situation, 16–19; exports from, 19; decline of, 25, 26. *See also* Cranganur.
 Myos Hormos, 12, 15

Nabateans, 3
 Nair, Sir T. Krishnan, 64, 182n.
 Narakal anchorage. *See* Cochin Port.
 Natesan (Foreman of Works), 153
 National Whitley Council, 72, 74, 206
 Native craft: on Malabar coast, 52; backwater craft (wallums or vellams), 52–3, 143
 Nelcyndra (or Nelkunda), 18
 Nero, Emperor, 20
 Nicaea, Council of, 13

Ocelis (Perim), 12
 Ootacamund, 100, 113, 161
 Otho, Marcus Salvius, 20

Pacheco, Duarte, 28, 34, 36
 Palmer, Sir Frederick, 154
 Pamban, 129
 Pannikar, K. M., *Malabar and the Portuguese*, 25, 38

Pares, Sir Bernard, *Russia and the Peace*, 239
 Pastoral nomads. *See* Sakas.
 Pentland, Lord, 78
 Perim. *See* Ocelis.
 Periods in art: China, 10; Hindu, 11
 'Periplus', quoted, 21
 Petronius, 21
 Periyar River, 16, 17, 51
 Persepolis, 4
 Petra, 3, 4
 Phoenicians, 15
 Phra, 4
 Pliny, 20
 Porkad. *See* Alleppey.
 Porto Nuovo, 129
 Portugal: Iberians and Phoenicians in, 27; Henry the Navigator and the explorers of the 15th–16th centuries, 27–9; Vasco da Gama's voyage to India, 29–31; Cabral's voyage to India, 31–3; settlements at Calicut and Cochin, 33–6; ousted from India, 36–8; decline of power, 38–40

Price, Sir Frederick, 162, 163
 Privateering, 6
 Purakkad, 45
 Puteoli, 15

Quilon, 18, 35, 45, 46, 51, 54, 129, 139

Raisman, Sir Jeremy, 199n.
 Raleigh, Sir Walter, 50
 Ram, Ananta, 132n.
 Rameswaram Island, 19n., 62; proposed canal through, 126, 128–9, 131–6

Ramsay, Sir Malcolm, 74
 Rangoon, 191

INDEX

Rattenbury, H. B., 167n.
 Raven, Sir E., 74
 Reed, Herbert, 153
 Rhinocolura, 4
Rig Vedas, 231, 241, 244
 Robertson, G., 58
 Roman Empire: beginnings, 13; under Constantine I, 13; extent in A.D. 14, 13; provinces added A.D. 14-89, 13; its imports from India, Arabia, and Somali, 19; love of oriental luxuries, 19-21; exports to India, 21; unit of weight used in, 22; capacity of trading vessels, 22-3; foundation of Constantinople, 23
 Royal Indian Marine (Royal Indian Navy), 184-6, 253
 Sakas (pastoral nomads), in India, 11
 Sapru, Sir Tej, 198
 Sargent, John, 228
 Sea-ports, origins and evolution of, 6-7
 Scott, Sir Robert Russell, 74
 Seneca, quoted, 20-1
 Shackle, Rev. G. N., 218n.
 Shackleton, Sir David, 74
 Shaw, Martin, 79n.
 Sheppard, Alan, 253
 Simons & Co. Ltd., Wm., 157n.
 Socotra (Discordia Island), 16
 Somali, 19
 South African Institute of International Affairs, 223
 South Indian Railway Company, 64, 65, 101, 128, 134, 184, 195
 Southern Ghats, 139
 Spanish Armada, 50
 Spinoza, Benedict, 250
 Stevenson, Robert, 132n., 163
 Suez Canal, 7, 53, 56
 Syrian Christians, of South India, 32, 141
 Talaimanaar, 144
 Talent, or amphora (unit of weight), 22
 Tellicherry, 44, 54, 129
 Temple, Sir Richard Carnar, 38, 40
 Thomas, E. F., 121n.
Times of India, 254-5
 Tothill, Admiral, 107
 Trajan, Emperor, 13
 Travancore State, 45; expansion under Martanda Varma, 45-6; treaty with the Dutch, 46-8; and the new harbour at Cochin, 61, 65, 180, 182, 198-202, 206; literacy in, 229
 Trevelyan, G. M., quoted 49-50
 Trichinopoly, 147
 Trichur, 122
 Trincomalee, 135
 Trivandrum, 54, 129, 139
 Tundis (or Tundi, Tyndis, Tyr-tis), 18
 Tuticorin, 130, 139, 144, 160; project of deep-water port at, 62, 111-12, 114-16, 131, 166, 168; and the proposed canal through Rameswaram Island, 126, 128-9, 131; dredging at, 166-7; port project abandoned, 168-9
 United Planters Association, 101, 179
Upanishads, 231, 241, 245
 Vaipin, 81, 83, 101, 103, 114, 153
 Vembanad 'Lake', 139

INDEX

Venduruthy Island, 189, 190, 209
Venice, 24, 26
Venkataraman, Shri M. S., 254
Venkateswaram, Shri, 254
Vizagapatam, 129, 151, 153, 167, 234
Wallums, or vellams. *See* Native craft.
Warmington, E. H., *Commerce between the Roman Empire and India*, quoted 19-20
West, H., 205
Willingdon, Lord: Governor of Madras, 61-2, 65, 77-9, 97, 107, 109-12, 114, 117-19, 131, 134, 155-7, 162; Viceroy of India, 194, 201-3, 219-20
Willingdon, Lady, 79, 88, 113, 114, 130, 162, 194, 202
Willingdon Island, 202-4, 209-10, 219-20, 223, 253
Wolfe Barry, Sir John, and Partners, 58, 60n., 83, 111n., 207
Zetland, Marquess of, 242, 248



CIRCULATED

1500
24.1.15

CENTRAL ARCHAEOLOGICAL LIBRARY,
NEW DELHI

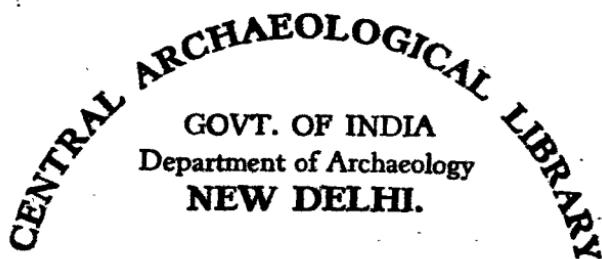
Catalogue No.

954.55/Bri-17616.

Author— Bristow, Robert.

Title— Cochin saga.

"A book that is shut is but a block"



Please help us to keep the book
clean and moving.